DOCUMENT RESUME

ED 085 006 HE 004 900

TITLE	The Teacher's Perspective. Selections From Reports by The Teachers of The Thirteen-College Curriculum Program 1968-69.
INSTITUTION	Institute for Services to Education, Washington, D.C.
PUB DATE	Mar 70
NOTE	196p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Curriculum Development; *Educational Programs; *Evaluation; *Higher Education; *Negro Institutions; *Teacher Attitudes; Teacher Developed Materials; Teachers
IDENTIFIERS	Institute for Services to Education; ISE; TCCP; *Thirteen College Curriculum Program

ABSTRACT

The purpose of this document is to show how the teachers in the Thirteen-College Curriculum Program (TCCP) perceive what they are doing and how things are working out. The teachers in these reports present their own views on the values of the TCCP based on their own experiences. In some cases there seems to be general agreement concerning the value of a particular endeavor or aspect of the program, although a few teachers may disagree. The selections are grouped by the following fields: ideas and their expression; quantitative and analytical thinking; social institutions; biology and the physical sciences; humanities and philosophy; new questions, doubts, and hopes; and effect of the project on teachers. Within each field the selections are grouped under headings consisting of certain basic types: themes and approaches; surveys of the year; anecdotes; comparisons; reviews of books and films; general impressions and appraisals. Two sections of general comments are included at the end. (Author/PG)

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THE TEACHER'S PERSPECTIVE

SELECTIONS FROM REPORTS

BY THE TEACHERS

OF THE THIRTEEN-COLLEGE CURRICULUM PROGRAM

1968-69

March 1970
Institute for Services to Education
1527 New Hampshire Avenue, N.W.
Washington, D. C. 20036

HE 004 900

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Preface

Let me begin with the necessary apologies. A report by a teacher is a personal matter, but so is a selection from reports by an editor. One hundred and twenty-four teachers wrote reports ranging in length from two to fifty pages and totaling to a pile over thirteen inches high. Making selections required choosing topics, choosing reports, chopping up and excerpting reports, and occasionally editing copy. I apologize for where I have shown poor judgement. I also apologize for not consulting those authors whose works were selected to make sure they were not used incorrectly. If there are some serious complaints, please let me have them. My apologies finally for the many typos in this document. I thank Elias Blake, Jr. and John T. Parmeter for giving me the benefit of their views when necessary.

The purpose of these selections is to document how the teachers perceive what they are doing and how things are working out. It is one thing to write beautiful curriculum units, another to determine what is actually happening in classrooms. The teachers in these reports present their own views on the value of the Thirteen-College Curriculum Program based on their own experiences. In some cases there seems to be general agreement concerning the value of a particular endeavor or aspect of the program, although a few teachers may disagree. In other cases, there appears as yet to be no agreement.

The immediate audience for these selections is the group of teachers, counselors, and directors that constitute the program and the Boston and Washington staffs of the Institute for Services to Education. We hope the, say, mathematics teachers will not only read the reports by other mathematics teachers, but also the reports by the teachers of the other subjects. The present work is an account of the project as a whole. We also hope that each of the fourteen programs (a fourteenth college joined the program after it was named) will build its own record of efforts, mistakes, and achievements using the reports by its own teachers.

More broadly, the audience for these selections (and for local collections) includes interested members of the regular programs of the participating colleges -- the presidents, deans, departmental chairmen, and teachers. The audience also includes the governmental agencies and private foundations supporting the project. Ultimately, we hope through commercial publication the audience will include teachers and educational authorities at other colleges and interested members of the general public.

The selections are grouped by field. Two sections of general comments are included at the end. Here are the fields and the final

sections.

Ideas and Their Expression

Quantitative and Analytical Thinking

Social Institutions

Biology and the Physical Sciences

Humanities and Philosophy

New Questions, Doubts, Hopes

Effect of Project on Teachers

Within each field the selections are grouped under headings consisting of key sentences taken from the reports themselves. These groupings are of certain basic types and it may be helpful if I indicate here some of these types. (For the key sentences serving as headings, see "Contents".)

Themes and Approaches. A consideration of what is important, what is worth knowing in a given subject, what lies behind the selection of topics and activities. An examination of what is distinctive about the new work.

Surveys of the year. A description by one teacher of the work for a year -- the units, the themes, the activities employed. An appraisal of the cumulative effect.

Anecdotes. How particular units, topics, pieces of equipment, activities worked out in particular classrooms. Accounts of investigations or creative work undertaken by students. Samples of student work.

Comparisons. A juxtaposition of the experiences of different teachers with the same unit or activity -- for how many did it work and why? for how many did it flop and why?

Reviews of books and films. An analysis of how students reacted to materials. What they found readable, difficult, interesting, boring, hard but worth the effort, not worth the effort.

General impressions and appraisals. What the project has meant to the teacher. New things it has made possible. Problems still to be tackled -- grading, greater participation of the students in design of program, etc.

A cautionary note is necessary in closing. It is a part of con-

ventional wisdom that two people can look at the same event and perceive it quite differently. What you see depends upon a number of things -- what you are looking for, your standards, your temperment (as in the joke about the optimist seeing the doughnut and the pessimist seeing the hole). In studying the reports, the reader faces a double task. He must grasp what the teacher is saying but he must also gain a sense of the teacher's expectations, standards, and temperment, so that he can set the teacher's report in perspective.

Additional selections from the teachers' reports have appeared in Journey into Discovery: "A Teacher on Teaching," Stephen Wilmore; "A Biology Teacher on the Chick Project," Elizabeth Clark; "A Math Teacher on Discovering the Binomial Theorem," Roger C. Ingraham.

Joseph Turner
Evaluation
Institute for Services
to Education

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106	/ In the PSNS textbook _/ the order in which the subject matter is presented is excellent..... /but_/ the big basic hypotheses concerning the nature of solid matter do not emerge naturally from the experimental results.	Thomas H. Wirth Aleyamma George Lewis Allen Melvin O. Smith B. B. Robinson
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117	The students interviewd community people and collected ghost tales, witch tales, and other folklore (superstitions, rituals, customs, cures).	B. Dilla Buckner John L. Quinn
122	The study of Black Drama was one of the most successful things we did this year and I plan to try it again.	Ann Carter Robert N. H. Andrews
125	/Students are polled on the books/	Robert N. H. Andrews Mark W. Booth
128	I was always in a quandary to decide whether students liked or disliked a given piece of music not so much on the basis of the music itself, but on the basis of that lousy room.	John L. Quinn Reuben C. Drake Charles Dean Willis G. Jackson Martin Carey Mark W. Booth Vincent C. De Baun Erma G. Dozier

132	It may be hard to imagine how you could act out the problem of inductive and deductive reasoning but these girls did it.	Dale Gordon Martha Satz Royal B. Leach
137	/The story "Point of View" by Averchenko/ can be followed up.. ... by having students write and read in class such stories. : . .	Royal B. Leach
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141	A marked difference between the two two sections has emerged	Alice Smith Mary Blackstock James Corum Leslie Sanders
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161	To a large extent, the program has conquered the problem of passivity in the classroom but the fundamental passivity of the students with respect to their education remains.	Richard M. Burian Martin Carey

166 I was forced to change my opinion/about students not understanding satire/ when a student or two brought in samples of humor and satire that they had written without being asked.

Nathaniel Gaylord
Perry Mack

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169 Before I started working in this project, I lectured most of the time.

Lely Burkehead
Margaret Artis
Nathaniel Gaylord
Ruth Chervin
Reuben C. Drake
John L. Quinn
Louise D. Stokes
Erma G. Dozier
Elizabeth Clark
Roger C. Ingraham
Edward F. Rice
Leslie Sanders
Perry V. Mack
Janie C. Jordan
Alice Archer
Anne Miller
Jimmie L. Cal
Johnsie Posey
Anne R. Phillips
Martha Satz
B. Dilla Buckner
Robert H. Cobbins
Mary S. Brown
Robert N. H. Andrews
Francis Austin
Jean Klein
John Ernst
Stephen Cawood
Michael W. Miles
Carolyn Cline
Joseph W. Colen
Vincent C. De Baun

Unlike the conventional approach, the thematic approach explores the selected themes through the various literary genre . . .

The approach in Ideas and Their Expression is based on the traditional, yet modern themes of Responsibility, Love, Self- Alienation, and Choice and Temptation, themes which are particularly significant to students today, themes which have special relevancy to students' lives, themes which are provocative and interesting, and themes which attest to the lasting quality and value of literature as a vital part of life.

The thematic approach differs from the conventional approach in several ways. First, unlike the traditional approach, the thematic approach does not devote units or specific time sequences to a study of pure poetry, short stories, novels, essays, etc. or certain literary periods according to chronological order or order of importance.

The thematic approach allows for more flexibility in organizing materials chronologically, either on a vertical or horizontal basis, e.g., the teaching of materials centered around Civil Disobedience by starting with Martin Luther King's "Letter from Birmingham Jail" and working back in time to Antigone.

Unlike the conventional approach, the thematic approach explores the selected themes through the various literary genre, ungrouped and unclassified. The only prerequisite for inclusion of certain genre at intervals is the effectiveness of their use at a specific time, planned or unplanned, suggested by students or teacher. The use of a variety of genre helps the students to realize that an idea may be effectively expressed in various media and forms.

The thematic approach presents a total picture of the idea or problem around which the reading materials are clustered, e.g., instead of reading an isolated story or poem, the students read a cluster of materials portraying various treatments of a theme. They almost always develop an interest in the subject which leads them to even wider and deeper reading. Thus, they become knowledgeable about a subject as the total picture is completed.

Secondly, the thematic approach differs from the conventional in that the forms of discourse are not taught separately according

to a designated form of development, but students are allowed, as they explore a theme, to write as their own consciences and interests dictate. Consequently, their writing often yields exposition, argument, description, and narration. Students cannot always determine in advance the form they will use when they sit down to write. The form usually arises from what they have to say and to whom they say it. Leaving the form to them, to evolve as they write, seems to free them for spontaneous expression which would probably not be created if they had to worry about form first and then content. Often the form which evolves in the final analysis is a combination of two or more forms.

Thirdly, unlike traditional approaches, the thematic approach interrelates speaking, listening, reading, and writing activities with the exploration of various themes through the various genre. There is no one textbook that divides everything into its individual little section each complete within itself.

Traditionally, Freshman English has been called "Freshman Composition," with the reading materials serving as an adjunct to the main purpose of teaching the students to write expository and other formal compositions. The thematic approach, however, using the title "Ideas and Their Expression," elevates the reading materials so that "content" is equal to "expression" or composition. At the same time reading materials stimulate effective writing and speaking, they also educate the students regarding human problems and their solutions, human ideas in the context of civilization, and other aspects of the human condition.

Comparing our regular English Program "on the hill" to our Thirteen-College English Program is indeed a pleasant task for me for many reasons, but mainly because our regular department, under the capable leadership of Dr. Lowell L. Simmons, has had the foresight to keep abreast of current trends in the teaching of English and to plan for and meet the needs and interests of the students it serves and for whom it exists. Last year the department changed from the use of the usual colorless and often offensive hardback College English: The First Year to a colorful and very pleasant paperback quite appropriately titled Way Out, by Lois A. Michel. Even the title is significant, and perhaps, in my opinion, two-fold, implying that contemporary students are "way out", or that they are seriously "searching" for a way out, out of their despair, out of their hopelessness, out of their helplessness.

Willie T. Williams
Ideas and Their Expression
Florida A & M University

* * * * * * *

During the course of the year, I have used three of the the thematic units composing Ideas and Their Expression--"Choice and Temptation," "Responsibility," and "Love." Several of the reading selections from the "Self and Alienation" unit also were used. The basic issues raised by questions involving either of these three themes seem more significant to students than topics such as "College--The Threshold" or "Protraits in Prints," which are actual titles from the text used in the regular first-year English composition course.

A very positive force which the particular thematic approach of Ideas and Their Expression has going for it is the enthusiasm generated by its veteran teachers. Their excitement operated in a manner similar to the Hawthorne effect. In fact, I was convinced by August, 1968, that my students, too, would make unusual gains during the academic year. And I am certain that they have, although I hasten to add that time and again I have been frustrated and disappointed, but in reflecting I must admit that what some students have accomplished is amazing given their initial tools. Several students, for example, admittedly read more during the first two months of this school year than they had in three to four years of high school English. So that when I boast of student accomplishment here, I do not necessarily mean unusual intellectual growth strictly in the sense of growing awareness and increasing insight.

In theory, our thematic approach seems an excellent way of actually achieving student goals, and in practice, it does make an important break-through toward doing exactly that. I feel, however, that much of the potential of Ideas and Their Expression is wasted because the unitsfall down in internal ordering. Seemingly, one of the better ways of organizing materials is according to an increasing level of complexity. There appears, for example, to be no clearly defined reason for moving from the "Humor and Satire" section of the "Responsibility" them to the "Drama" section or to be even more specific from Hughes and Swift to Brecht and Sophocles. Perhaps if students are able to successfully handle simple problems (still thematically centered), they might be motivated to attempt more difficult ones. If, however, from the beginning to the end of the course the degree of difficulty remains approximately the same, then the possibility of exploiting the student's own feeling of growing, expanding achievement is minimized. In some more obviously meaningful way, the content of thematic units should, I believe, be organized around a principle involving the increasing complexity of materials. I should add that in advocating a rethinking of internal progression, I am considering the fact that my students seem to need more of a sense of the continuity of things. Theme alone is not enough. In order to deepen insights or expand viewpoints, they need more to go on

The reading materials used in TCCP are much more varied and relevant than those used in the regular program. Project materials cover a wide range of topics, types, authors, styles, and periods; whereas, materials for the regular program are composed primarily of essays. Another quite significant difference between the literary selections of Ideas and Their Expression and Freshman Composition involves the currentness of relevancy of the materials. The project includes a number of works (poems, songs, stories, essays, biographies, novels) by, about, or for (in the sense of being directed especially to) black people. The regular program does not include even one such work.

In addition, I believe that the selection of materials available to TCCP students is well-rounded and well-balanced. This balance in reading materials accounts, in part, for the different types of student writing obtained and encouraged. Students exposure to works other than factual essays (especially poetry and drama) helps to foster awareness of individual tastes, and also helps to develop positive attitudes toward the creative process.

Thadious Davis
Ideas and Their Expression
Southern University

* * * * * * *

As compared with its companion course in the regular program content-wise, the Thirteen-College Curriculum Program English course gives the student more exposure to a greater variety of literary genres (plays, short stories, poetry, novels, essays, letters) utilizes a more flexible selection of materials other than the textbook (recordings, films, tape recordings, art forms) encourages more honest, more creative and more imaginative writing free of inhibitions, makes materials more accessible through the use of paperbacks instead of a prescribed text or anthology, emphasizes more experimentation with language manipulation and writing styles instead of the restricted and formal study of grammar rules to improve writing, and makes materials more appealing to students through innovative presentation techniques and devices.

Because of the flexible and malleable nature of the program which encourages free and sometimes heated exchange of ideas, students are more likely to question, defend or attack accepted or traditional ideas in a relaxed manner, free of the approval or censure of the traditional authoritarian-teacher figure. One student remarked, "I learned from the course that what I have to say may be just as important as the next persons so speak out". Many students commented that the course was entirely different from any

they had been exposed to. Several stated that they were more confident in their own ideas, more conscious of their writing and more willing to try something different. On the other side, a small few complained of the "weird" assignments as two called them as they "required too much thinking." One or two felt that we stayed on a story or poem too long and after a while they lost interest. That is something I must watch and be aware of. Some were very conscious of grades and felt that they hadn't made much progress because their grades didn't soar by "leaps and bounds". I was particularly gratified when one little, sweet, shy thing wrote that the course "has been inspiring and has given me the opportunity to express my thoughts freely without anyone having to pull them out of me". Another sophisticated young lady wrote that it was not "the standard traditional course of teacher say, student listen". She calls me the "kind, patient, respectful slave-driving teacher "who made the course as enjoyable as it was". "English", she continues, "had always been second in my book, now it is first". Because the course is so different, one girl remarked, she has not "completely adjusted to it yet".

In the regular program, too much time is spent in having students memorize grammar rules and endless exercises. The customary book report, as against student's fresh approaches to the descriptions, characters, and scenes in the books they read, seems dull and uninspiring, especially if students copy from professional reviewers instead of reading and enjoying the books themselves. The research paper, as it is presently given to the students, is a farce as most students carelessly plagiarize meaningless information on topics probably selected by the teacher. In the Thirteen-College Curriculum Program, students analyze motives, results, characters, situations and try to relate these aspects to their own lives and experiences.

Louise Stokes
Ideas and Their Expression
Norfolk State College

First impressions were that the son was put out of his mother's house because he was a shiftless and disrespectful teenager.

Willie T. Williams
Ideas and Their Expression
Florida A & M University

/ The 'Big Bessie" activity is based on the poem by Gwendolyn Brooks: /

Big Bessie throws her son into the street *

A day of sunny face and temper.
The winter trees
Are Musical.

Bright lameness from my beautiful disease,
You have your destiny to chip and eat.

Be precise.
With something better than candles in the eyes.
(Candles are not enough.)

At the root of the will, a wild inflammable stuff.

New pioneer of days and ways, be gone.
Hunt out your own or make your own alone.

Go down the street.

The activity, in the form of a sample lesson, Thirteen-College style, was done at the beginning of the Love Unit after my students had written, read, and explained original love poems and had taped them to the tune of background music taken from the record, Rhapsodies for Young Lovers.

The head of the English Department, Dr. Simmons, requested a sample demonstration from Thirteen-College English for members of his department, and I decided to use "Big Bessie" because of the interest and enthusiasm that had generated among the students as they analyzed the poetry they had written and because the poem afforded many opportunities for students to talk from experience.

*From SELECTED POEMS by Gwendolyn Brooks. Copyright c 1963 by Gwendolyn Brooks Blakely. By permission of Harper & Row, Publishers, Inc.

Generally, we followed the "Big Bessie" Unit as prepared by the Curriculum Development Group making slight alterations and additions along the way. Students began by discussing implications of the title and right away got a wrong impression of the kind of person someone named Big Bessie would naturally be. She was described as a large, stern, black woman who liked to cook. Then, they discussed various interpretations of the line ..."throws her son into the street." First impressions were that the son was put out of his mother's house because he was a shiftless and disrespectful teenager. As the examination of the poem continued however, both of these ideas changed.

At this stage, copies of the poem were passed out to the students and teachers, and one of the students read the entire poem orally. Then the discussion continued with the examination of the first stanza. The students described the kind of day and went on to identify the voice in the first stanza as a narrator's and the voice in the other stanza as Bessie's. Students intimated that "bright lameness from my beautiful disease" referred to Bessie's son's birth. Bright lameness was taken to be her son and the beautiful disease, her pregnancy.

After this kind of examination and analyzation of each line, the class finally concluded that their initial interpretations had been misleading. They then felt certain that Big Bessie was simply a kind, loving, and understanding mother of no particular size or race, merely a universal mother interested in giving her son a chance to find his way in life at the proper time. They concluded that the son was not shiftless and disrespectful but was simply reluctant to leave the security of his mother's home to face the perils of the world.

The session ended with my asking a student to take the role of the narrator, one Bessie, and one the son and show us how they thought a mother would say the lines to her son. The narrator stood and walked to the front of the room, narrated the first stanza, and returned to his seat. Bessie placed a chair in front of her classmates and asked her son to sit there. Then she said the lines to her son the way she felt a mother would say them. At the beginning of the line, "New pioneer..." she took the son by the arm and gently guided him from the chair as she continued to advise him. They walked away a few steps and stopped. She gave him a kiss and a slight push and sweetly, but firmly, whispered, "Go down the street."

Of course I was more than pleased with the presentation for many reasons, but mainly because the students themselves had found that poetry can be delightful, challenging, and meaningful and

because they had come to understand that poor reading yields misinterpretation, while close, careful, and purposeful reading yields correct interpretations as well as a feeling of accomplishment.

I guess the tempo for the complete exercise was set several minutes before the demonstration began when, because I felt that my students might be a little nervous at the thought of having eighteen visitors from the English Department (at one time), I asked the class if there was any particular place they wanted their guests to be seated, when no sooner had I asked the question than one young lady nonchalantly retorted, "Yes. Put them up front so we can keep an eye on them."

Generally, our guests were impressed with the amount of student interest and response, with the quality of answers generated, with the personal discovery of answers, and with the facility of involvement.

The tape of the session is available for examination.

Here are samples of the spontaneous classroom writing by students generated by the "Big Bessie" activity:

* * * * * * *

A New Outlook on Life

Once I asked myself this question
Over and over again:
Why do I have to chip and eat
And make myself a name"
I'm not ready to meet the world
Or go out on my own,
Cause Mamma ought to care for me
And let me keep this home.

I never worked 'cause I didn't have to.
This she did for me.
She would bring in the money
And I'd spend it like it was free.
But I'd always dream of being rich
And this I won't deny.
But still I'd lie around the house
And let the world just pass me by.

Then Mamma came to me one day
And this is what she said:

Son, you know how much I love you;
You mean all the world to me.
But you've now approached your manhood
And I must set you free,
To travel this vast world on your own
And to decide what's right and good.

You must accept responsibilities
That will confront you everyday.
Because I won't always be around
To help you find your way.
You can't live on dreams forever;
You can't depend on what's not there.
Do what you think is best for you.
Start now! Search everywhere!

Well, I listened to my Mamma
And I've gained a new outlook on life.
I'm buying myself a pretty home
And I'm caring for my wife.
But I'll always remember my Mamma's words.
And when my son becomes a man,
I'll talk to him like Mamma talked to me
As she gave me that last helping hand.

* * * * * * *

Family Love and Parents' Responsibility to Their Offspring

As a result of reading "Big Bessie," I began to think about parental love all over the world. I began to wonder if all parents have a sense of responsibility to their offspring. Do they love their children enough to send them 'down the street"? Parental and maternal love are such "funny" things. By "funny", I mean there are so many different aspects of parents' love toward their children. In some instances, one or both of the parents love their children too much and tend to hurt them. They spoil them with the good things of life, never letting them know that life is not a beautiful, beautiful dream. When it is time for these children to "chip and eat" they are totally upset by the world outside of their parents' protective love. These parents have made their children, more or less, weak and dependent upon them for guidance in their lives.

The parents that tend to give their children love and yet, at the same time, show them the reality of life are, to me, much better parents. The children seem to resent their parents for this, but

after they get into the world, they respect their parents for molding them into wise, mature adults.

Parents, of all sorts, though, love their children, which is very important. More important though, is how they use that love to make their children suited for the cruel world that lies ahead of them. Parents who encourage their children to go into the world and learn its ways are better parents than those who keep them sheltered from life and then later have to send them out without the capability of governing themselves and making decisions. It is a wonderful feeling indeed to know that I am fortunate enough to have parents to love me and send me "down the street."

* * * * * * *

Big Bessie's Big Decision

Oh how blind I was not to see that you were becoming more and more dependent on me. Why was I always giving you a hand? didn't I see that you were then a man? Oh the day itself seems to punish me for there's not a sound but the cold singing wind in the trees. Oh, what dreams I had for you, dreams now that will never come true. But now I've made up my mind and I know what I must do. I should have been bound and determined to make something out of you. But instead I've sheltered and robbed you, but in my house you can always sleep, for it is me and only me who will go out into the street.

* * * * * * *

Big Bessie throws her son into the street

The poem "Big Bessie" inspired me to write this paper, not only because I feel this is one of the best poems ever written, but because it can be applied to my family in an opposit way.

My mother didn't throw her oldest son into the street soon enough. Her failure to do this has been a major downfall of them both. He is thirty years old, or will be in October and has a family with three small kids. I believe that since he is the oldest, my mother didn't know what she was getting into when she tried to give him everything he wanted; then when he was married, he continued to be dependent on her. He would get angry sometimes when my mother tried to tell him to be independent, to work, to take care of his family, so that they would respect, and love him. He would pack up and leave, only to return by mother sending him the necessary money. I think mother realizes what she's done to him and

herself, but she loves him, and love makes one to do foolish things.

This brother had every opportunity the rest of us had. He could have gone to college, because my mother tried to talk him into going. He's very intelligent, and he is also a jack-of-all trades. So we all know that he's just lazy, but the whole family feels sorry for him, and helps him out of a rut, when we should stop and wait for results. I believe it's too late for him to be thrown into the stree, but if it had been done earlier, and mother had been firm about it, it would have been a better chance for better results.

This poem will help one to understand that a child needs inspiration, so that he will do things on his own, rather than being dependent. He needs to be thrown into the street so that he could have respect from his family. He shouldn't just have ideas, but should use them. One should realize that he has his future, and should attempt to fulfill it.

Even though my brother has many bad qualities, he is deeply loved by all of us.

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Dear Mrs. Williams,

The poem "Big Bessie" I think every student or young adult should become acquainted with at some time in his life. This poem shows a mother's love for her son.

When I read the first line of the poem, I thought of Big Bessie as being a tramp or a no-good woman because she threw her son into the street, but on Thursday when the class gave the demonstration I began to get a different opinion. After the demonstration I was very touched and happy. Happy because now I know what my mother meant when she said she wanted me to be somebody and she would do anything or whatever it took to see that I was. I know now why she acted and did the things she did. She did these things only for my sake, because she loves me.

Before I got an understanding and got acquainted with the poem I thought of my mother's ideals as being all wrong. Now I've found out how right they all were. Mrs. Williams, I'm very thankful to you for acquainting me with this poem because it has helped and changed me. It has changed me in a way that I've planted a goal in the back of my mind and for my mother's sake I'm going to be successful.

Especially was I surprised that "Antigone" would have such popularity with students.

Usually students found books by and about Negroes or blacks more exciting than those by non-blacks. Many students questioned the inclusion of some materials because these did not seem relevant to their particular culture and background. One request was that more black reading material be added because it is more relevant. However, these same students complained about too much black material in another class although they were able to relate information gained from this class to the English class. One example, was "Raisin In the Sun". Students had studied in Social Institutions the Negro family and in the play the class discussed folkways and structure of the Negro family such as emasculation of the Negro male and the matriarchal family structure. Language and voice were also discussed. At the time students were working on "hiptionaries" as an outside project and discovered that there was no need to translate "Raisin in the Sun" into hip language as they were doing "Antigone". The language of the play already had the built-in colorful appeal desired of language.

Works rated very highly by the students were Manchild in the Promised Land, Antigone, Raisin in the Sun, In White America. These works dealt with choices, struggles, problems, violence and defiance - all of which are current youth concerns - and black students identified with the problems of these protagonists as problems of their own that need to be overcome. I was surprised but pleased with the fact that students requested dramatizations of the passages from the plays. Especially was I surprised that "Antigone" would have such popularity with students. So intrigued were many of the students with "Antigone" that many read the entire Oedipus Cycle and most read "Oedipus Rex". It mattered not to the black-awareness conscious student that Antigone or Oedipus were non-blacks. The unversality of the cycle had an inherent appeal and relevance to the young students.

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A successful activity was the teaching of "Antigone" and the hip versus square language. Students were assigned "Antigone" but it was suggested by the teacher that students read "Oedipus Rex" as further reading for background knowledge. After the hint about the incest theme from a few students who knew the myth, many students read "Oedipus Rex" and wanted to discuss this play first. An organized debate on predestination and guilt provided students with a variation in routine and chance to express themselves competitively. From "Oedipus Re the class moved into a discussion of "Antigone" and the question of civil disobedience, loyalty and love. Students sided with Antigone an expressed great admiration for her and her actions.

The language of "Antigone" was studied "closely" and when studen translated passages from "Antigone" into hip language, students still enjoyed the exercise. The hip translation did not occur until after the students had discussed and understood the meaning of the play. (Students were working on "hiptionaries" as an outside grpup project along side the study of "Antigone".) After the translations were made the hip versions were read along side the "straight" or original version to show the difference in language expression. The students fina conceded that although hip language is colorful and has a unique vitality of its own, nevertheless, it is a limited language when preci meaning is desired.

The use of hip language added interest when class interest had waned. The universality of the "Oedipus Cycle" plus the use of hip language contributed equally to the success of "Antigone" as a class activity.

Iely Burkehead
Ideas and Their Expression
Jackson State College

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One excursion, which proved to be important, happened during the second semester, when we went to a suburban theater to see Oedipus the King, a commercial film featuring Christopher Plummer, Lilli Palm and Orson Welles. Because we were in the midst of studying Oedipus Re (and even with the visual aid of an "educational" study-film, interes was quite low), we were very enthusiastic about viewing this newly-released interpretation, particularly since it had been filmed on location in an extant Greek amphitheater. As it turned out, the most significant carry-over from the production involved the setting, "ske or scene-building. The open-air theater built on the side of a hill was truly an impressive sight. And what remained with one group of students was a vivid impression of the background or backdrop for the movie performance, which was the restored "skene" resembling a columr temple or palace.

Subsequently, that class of twenty-four decided to present a dramatic reading of Antigone (which the group unanimously voted to read following Oedipus Rex) on the steps of Allain Hall, a new building with rows of wide steps at least one story high. I was surprised that the students were confident enough in their abilities particularly in view of the nature of the materials to have such a presentation (in make sh costumes, even) on one of the busiest campus sites, Even if Plummer and company would not have applauded the performance, I did because most of the scenes were well-acted, most of the lines well-delivered especially for first-year students who executed the project almost unassisted. I was really pleased with the understanding and interpretation of lines and with their usage of the chorus. However, I must admit that I was guilty of frequently and anxiously asking about their progress after the initial discussions in which I helped them analyze the language of the drama.

Their undertaking reinforced my opinion of the ampunt of creativi and ability in that group of students. Additionally, the positive attitude of the students when faced with distractions was beautiful to see They had both purpose and direction, and seemed to lend each other support. Everyone of the participants seemed to have been above the taunts yelled from passing cars; however, many angrily condemned the mocking students who 'probably never even heard of the old Greeks."

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The students enjoyed both of these plays immensely /Antigone and Caucasian Chalk Circle/. Through such activities as dramatizing crucial or significant passages, rewriting passages in "hip" language (studen thought this was fun, but couldn't see how it would help them to be be English students) or creating new versions to selected passages and staging mock trials (with Antigone and the Chalk Circle episode,) students were able to see and feel the crisis with which the various characters were confronted. They taped the Antigone trial which they wrote and staged and played the tape to each other's class for discussion and criticism. My second class did a better job, it was generally agreed. Most of them felt that Grusha, in the Caucasian Chalk Circle was entitled to the royal baby because of the love and care she had given him and th Antigone was justified in burying her brother even at the cost of her own life. Some felt that both Grusha and Antigone were foolish to risk their lives for a principle. Many heated discussions and ardent papers were presented to support varying opinions about both women. The stagir and directing of the circle scene from the Chalk Circle and the execut of the trial of Antigone were well done by students, although one class did a more professional job than the other. They liked Antigone so well that they willingly read Oedipus Rex and Oedipus at Colonnus (not all

read this one) which, although they were not included in the unit, we discussed and studied in class. I borrowed the Oedipus Rex film series edited and produced by Britannica Films and narrated by an English Professor from Yale University, from our college audio-visual library The graphic portrayal of the scenes and the dynamic performances of t actors impressed and stimulated my classes very much. Despite the fac that I did not push the issue, most of them read the background mater of the House of Atreus from Edith Hamilton's Mythology. I, too, thoroughly enjoyed this part of the unit.

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I started off with the "Responsibility" theme,

followed by "Choice" last year and "Love" this year.

Louise D. Stokes
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For both years, (1967-68 and 1968-69) I started off with the "Responsibility" theme, followed by "Choice" last year and "Love" this year. I had anticipated using three themes this year, closing out with "Choice", but because of the large quantity of detailed and provocative materials in both "Responsibility and Love", I have only used those materials from "Choice" that were most relevant to the other two themes.

/On the first day,/ in an effort to free the students from thei preconceived notions about English (English is hard, dull, uninteres I can't write; I don't have anything to write about, etc.) and their moral and social inhibitions about expressing themselves freely and openly (fear of teacher's censure and/or peers' ridicule). I proceed to establish a relaxed and comfortable atmosphere that would invite open discussion, using some of the voice execises and the short intr ductory unit, "Who am I? -- A Search for Identity". Having a student to pantomime what appeared to be an angry confrontation with or an attack of possible violence on me with subsequent reactions on my pa (without giving students any indication or warning as to what was to happen,) provided excellent but unusual and exciting material for wr first (In the incident you just witnessed, exactly what did you see was the question directed to the students.) and later for discussion (Reading and comparing accounts of what everybody "saw" opened up a lively and controversial dialogue.) Students' faces quickly register puzzlement, wonder, skepticism, shock, and a Is-this-teacher-nuts-or something look at such an assignment. (One of the fellows whom I ask to do the pantomime backed out at the last minute because he "just couldn't do that to the teacher. I was just scared, Mrs. Stokes".) After the initial "shock", however, they responded enthusiastically (a few skeptics remained but gave in a bit reluctantly), and my hope soared upon hearing one little lady remark to another as they were leaving, "You know, child, I think this class is going to be fun".

On the second day, I followed with Otis Redding's "Sitting on t Dock of the Bay" and later with Aretha Franklin's "Respect" from the CRG voice tape (Shock again adorned the faces of my skeptics.) in wh I asked students to indicate their moods, feelings, or impressions upon listening to the recording. At first, most of the students, influenced by the lyrics, summarized or paraphrased what they thought to be the meaning of the song. After a brief discussion with the

students, I played the tape several times more, asking the students, this time, to jot down at random anything that came to their minds as they listened. This time the response was refreshingly different and spontaneous; already I was able to spot a creative touch here and ther These jottings were used later for short papers in which students earnestly tried to capture a mood or a dominant impression. Even then a few were still bogged down with trying to interpret the lyrics or paraphrase them into their own words. We read the results aloud and attempted to analyze the voice of the writer, an activity the student enjoyed immensely.

After a few days of doing the voice exercises, we moved into the "Who am I ?" unit, concentrating on the excerpts from "Growing in Knowledge". Life and Times of Frederick Douglass; Black Boy, Richard Wright; "Letter to my Nephew on the One Hundredth Anniversary of the Emancipation" and "Letter From a Region in My Mind", The Fire Next Ti James Baldwin; and "That Same Pain, That Same Pleasure", Shadow and A Ralph Ellison as focal points for discovering significant meaning in people's lives and also for a comparative study of voice and style in these four writers. By this time, most of my students were ready to write their "Moment of Truth", although a few were still reluctant to write frankly about themselves. Some asked such questions as how personal should this be? Suppose my moment of truth is something bad? Will anybody else see this? What do you want us to say? Many of the writings revealed many emotional "hang-ups" and gave me some idea of the myriad serious problems, anxious fears, and haunting doubts that' existed in the lives and minds of the fifty students in my intellectu care.

I began the "Responsibility" theme with "Humor and Satire", Part I. "Responsibility" is a sequence of units "designed to elicit a consideration of responsibility in its various facets by presenting contexts in which man must determine just what his responsibilities are". Using the Noah sequence of Bill Cosby's recording, Bill Cosby I a Very Funny Fellow, Right! in which a Biblical myth is placed in a contemporary setting to pose serious problems of responsibility, we considered humor as a vehicle for airing these problems. At first, so of my students were a bit hesitant and two were outraged and somewhat hostile toward using Biblical material in a humorous vein. Two young ladies, both of the Apostolic faith, one from Georgia and the other from Virginia, felt that we were"playing with the Lord". Although I, along with the more broad minded students, explained that one could indeed have serious religious considerations and convictions and still inject and see humor in certain events, incidents and characters in o Biblical history, these two girls, however, remained adamant and unyielding to the very end. So as not to offend their sensibilities as well as those of a few others who probably had lingering doubts, I readily and happily suggested that when they wrote their anecdotes th could substitute historical, literary or current news material. Follo Cosby's style and creating a few of their own, students wrote humorous

pieces, using such biblical incidents as Moses and the burning bush, Daniel in the Lion's den, the handwriting on the wall, Adam and Eve (very popular one) and Samson and Delilah as well as historical personages - Napoleon, Christopher Columbus, John Smith, etc. literary characters (Romeo and Juliet - very few used the literary) and the Negro-white relationship. Although the anecdotes (many of them) were generally funny, they failed, for the most part, to have effective punch lines and to show proper connection between the serious and the humorous aspects. The class realized these two failings when some of the would-be wits read their efforts to the class.

Surprisingly, my students did not find Langston Hughes Simple stories (Simple Says a Prayer", "Duty Is Not Snooty" and "Vicious Circle", from the Best of Simple) particularly humorous, although they seemed to have enjoyed reading and discussing them. Because they failed to s the subtlety and preciseness in Harry Golden's "Sojourner Truth and Gene Young" and "Negro Anti-Semities" from So What Else Is New?, they did not like Golden at all. Somehow, I couldn't seem to illuminate th aspect of humor to the point that they could see what I saw. Many fel that humor meant that something had to be hilariously funny; eventual most of them began to see that humor can be sometimes subtle and unde stated, a bit dry and a bit wry.

If they had a bit of difficulty with humor, they had a mountain of trouble with satire. Jonathan Swift's "A Modest Proposal" offended some, nauseated others, and angered still others. The first and loude reaction was "Mrs. Stokes, this man is crazy, isn't he" followed by "How can anybody suggest something as cruel and inhuman as this". Aft trying to convince the students that Swift was neither crazy (some li terary people say he was) nor cruel when he wrote the "Proposal," but instead was a dedicated churchman who was moved by and concerned with the conditions of poverty and inhumanity permeating his country and time, I was then successful in getting them to understand how effecti and explosive this weapon can be in the hands of a skillful artist. Students attempted satirical pieces of their own, highlighting a soci problem that was relevant to them and their time. Popular topics incl various facets of the black-white problem, poverty, the Vietnam War and the draft, campus rules and regulations and police brutality. Som of the papers showed merit and others, in a too obvious attempt to be overidingly satirical, exaggerated to thepoint that the satire was no clearly evident or relevant. Several students, nevertheless, understo satire to the point that they used it as a mode of writing in other papers assigned throughout the year. I was and still am happy about this. One student brought her recording of Macbird to class which we played and discussed. I would suggest that Macbird be added to the un

In "Humor and Satire" part II, which deals with "Language and Speech - Drama", we concentrated on a more serious consideration of responsibility in the study of Bertolt Brecht's The Caucasian Chalk Circle, which illustrates the conflict of the individual with his

conscience and Antigone, which explores the conflict with authority. /A discussion of Antigone and Caucasian Chalk Circle follows. It is to be found under another item, namely, "Especially was I surprised that 'Antigone' would have such popularity with the students."/

I need not say much about the Visual Arts section of the theme simply because I did not use it. I just don't feel that I am adequate capable or familiar enough with the technical elements of art to present this aspect of the unit to the class. Perhaps I should try it just to see how I would approach and present it. Frankly, I am a bit leery about doing so. To paraphrase Scarlett O'Hara in Gone With the Wind, I'll think about that next year.

From drama, we moved on to fiction, using Conrad's "On Outpost o Progress", a short story set in a remote continent which depicts "civilized men" in a crisis and Ralph Ellison's Invisible Man, an autobiographical novel that looks at one man, a race and finally the Amer can civilization, all in a crisis. My students, just about unanimousl simply did not like "Outpost of Progress". Why? Their answers ran something like these: "It doesn't hold my interest", "It seems to be a stupid story to me", "Why is it considered a masterpiece"? (It's in the Short Story Masterpieces Collection edited by Robert Penn Warren. "It moves too slowly", "It just doesn't move me at all", "It's dull a boring". After we had struggled through it, I admitted to them that I didn't particularly like "Outpost of Progress" either. They were a bi surprised because they thought that English teachers liked all of the literary works. /Some brief remarks concerning Chamber Theater follow They are to be found under another item, namely, "Chamber Theater proved an excellent practice for maintaining interest./

Although we started the unit on a humorous note, we ended with serious and more complex consideratipns. Opening with White America, a dramatic documentary history of the Negro's plight in the United States, students immediately chose passages (some suggested by CRG, others of their own choosing) to dramatize. This play, which was some how very appealing to them, evoked and provoked much heated controver which they tried to resolve in class and finish in the corridors or a their respective "hanging out" places. Using excerpts from the record Whose Hand Is On The Gate? as background, students staged, directed and acted out selected passages. At the end, we played the entire recording during which time students jotted down and later discussed their feeling, moods, and/or impressions upon hearing those selection that either interested or offended them.

Next, we examined civil disobedience as it pertains to responsibility looking closely at the following men and their writings: Socrates through the eyes of Plato in "Crito"; Adin Ballou, "The Catechism of Non-resistance" in The Kingdom of God is Within You; Henry Thoreau in "Civil Disobedience" from The Portable Thoreau; Martin Luth King in "Letter From Birmingham Jail"; Leroi Jones in "What Does Non-

violence Mean?" and"State/Meant" from Home; Ralph Ellison in "That Same Pain, That Same Pleasure" in Shadow and Act; and Eldridge Cleaver in Soul on Ice. (I merely mentioned the latter as my materials from CRG on Cleaver did not arrive in time for me to include him in this year's work. We also considered Gwendolyn Brooks' "A Bronzeville Mother Loite in Mississippi, Meanwhile a Mississippi Mother Burns Bacon" and "The Last Quatrain of Emmett Till" in connection with the area of civil disobedience. Besides wrestling with this problem as each man saw it and responded to it, students also compared writing styles, language manipulation devices, mood and voices and stances of each. From oral reading by volunteers, they could see and hear the ringing oratory and conciliatory tones of Martin Luther King, the determined and uncompromising stands of both Socrates and Thoreau, the subtle irony of Ballou the harsh bitterness of Leroi Jones and the subdued passion of Ralph Ellison. In response to the question, "Which man speaks most directly and most convincingly to you", the majority of the students wrote that Martin Luther King and Leroi Jones were the most appealing to them. Many admired Dr. King's noble adherence to non-violence as a worthy and necessary virtue, but they also felt that Jones was "more with it" and saw some merit in his challenging call to violence as the answer.

In order to capture the voice and style of three men - King, Jones Ellison - students wrote individual dialogues in which they had each man to articulate his stand on a particular problem in his own voice and style. It was interesting to note how close and how far students came to imitating the three men. One of the students brought to class her personal recording of Dr. King's speeches, which we used for comparison with the "Letter". Students liked especially his "I Have a Dre which offered fascinating parallels in style and structure to his "Le from a Birmingham Jail". One or two students did a commendable and admirable job in imitating the oratorical tones of Dr. King in their or reading of his speeches. A final assignment in this unit was for students to write about some law or regulation that they considered unju employing the voice of either King, Jones or Ellison. Here they had a opportunity to "let off steam in an oratorical yet persuasive style, in a bitter, satirical and ironical vein, or in an impassive, subdued mode. Most, of course, imitated either King or Jones.

After spending the entire first semester on "Responsibility", we indulged in a change of pace and experimented with Carolyn Fitchett's (CRG) voice exercise on "Descriptive Wring and Sensory Perception" wi the accompanying writing models and patterns and samples of student writing. (Excerpts from The Grapes of Wrath, John Steinbeck; Miss Lon hearts, Nathaniel West; and "What's in a Face - The Mind of the Man B It", Alan Brien in Holiday Magazine.) Students especially enjoyed work with the sentence patterns - I am like_____, To be alive feels_____ etc. and had fun trying to capture the voices of the persons describi themselves in the I am a or I am like a_____series. I read the descriptions aloud without revealing the student and the class tried to fit the descriptive voice to with the person. In most cases, they

the descriptions were so transparent and could be easily detected or students did a fairly good job of describing themselves. They also liked the "What's in a Face" assignment in which I asked them to write a vivid description of the most unusual or arresting face that they have seen. Many of them had a "field day" in experimenting with graphi images and descriptions (some a bit farfetched and over exaggerated.)

By this time, students were ready for the "Love" theme, one to which they had been looking forward. In this unit, we tried to look at love and the various shapes it assumes in the lives and affairs of man, examining materials ranging from the simple to the more complex manifestations of love. First, we juxtaposed Bertrand Russell's essay, "Marriage and Morals", with Shakespeare's "Let me not to marriage of true minds....."to show the relation of love to sex, of marriage to them both, and to point out the distinction between love as a special act of human behavior and as a literary expression of a particular feeling. This lively discussion got the unit off to a good start; however, one seemingly trivial drawback (but to my girls a tremendous one was that girls dominated the two classes 47-3. In other words, three boys were simply not enough. So that they could get a more representative male viewpoint on the subject of love, the girls invited fellows from other classes to come and give their masculine opinion. The addit of new young men certainly added sparkle to an otherwise overwhelmingl female conversation, and I strongly suspected that some of the more ambitious outdid themselves in their vociferous and unyielding respons to both the Russell and Shakespeare's pieces as well as to other aspects of love brought out in the course of the discussion.

Using Shakespeare's sonnet, "My Love and I are Three" and "Upon Julia's Clothes" as motivation, I encouraged the students to put their feelings about love down in a poetic form. Right away, they were fearf and a bit unsure because they felt that poetry was"hard to write". As so many of them were so preoccupied with the notion and the misinforma tion (gathered somewhere down the line of their education) that poems must rhyme, they found it difficult to say what they really wanted to; therefore, I h[illegible] to banish this false idea that they had embraced. Sinc habit is such [illegible]ful master at times, students found it difficult to break away [illegible] rhyming lines. One declared that a "poem doesn't seem c[illegible] look [illegible] a poem unless it rhymes". To the detriment of sacrificing a[illegible]ing a thought or idea, they would still try to rhyme even if it mea[illegible] saying something farfetched, irrelevant and/or inane. Nevertheless, [illegible] of them experimented with free form verse and came up with some [illegible] promising results. Those who wished to read their creations to [illegible]ss who in turn offered constructive criticism and ideas.

In Part II on "Passion", we dealt with three works of different genres: "Ode to Billy Joe", Bobby Gentry's haunting ballad; "The Horse Dealer's Daughter", D. H. Lawrence; and Desire Under the Elms, Eugene O'Neill. Here we investigated the theme of romantic love in three

separate yet similar environments in which no emotive language is encouraged or cultivated. Starting with Bobby Gentry's recording, we worked on inferance as a method for making certain conclusions based on bits of evidence presented in the work. My students seemed genuinel interested in creating a definite personality for the girl in the ball and also a rather penetrating analysis of her family and home life. Th highlights of this particular work consisted in the student's attempt to first ascertain just what it was the girl threw off the bridge and also to assume the voice of the girl as she gives vent to her feelings and emotions upon hearing the news of Billy Joe's death and experienci the subsequent cold and unsympathetic response of her family.

A thorough study of "The Horse Dealer's Daughter" and Desire Under the Elms followed the "Ode to Billy Joe". Foremost in the discussion was a comparison of the people, places, and situations involved in all three creations. We also talked at length on the presence or absence of love in all three instances and the possible effects on the characters. Picking out textual evidence to support their contentions, students readily saw both similarities and differences in the writing styles and language as well as in the characters and situations. They experimented with Chamber Theater in "Horse Dealer's Daughter" (This attempt at Chamber Theater was more successful, but not overly so,) and dramatized several excerpts (e.g. Part III, Scene II) from Desire Under the Elms. The love scenes involving Mabel and Dr. Ferguson in "Horse Dealer's Daughter" and the torrid love encounters of Eben and Abie and the subsequent tragic results in Desire Under the Elms especially appealed to them. Not only did they dramatize these themes, but also they wrote about them at length. Following a suggestion given in the unit, I had the students to write their own versions of "The Horse Dealer's Son", capitalizing on the adventures or misadventures of Mabe brother Joe after he marries a girl older than he and who will be indebted to his father-in-law for giving him a job. They read and examin each other's papers, again making suggestions and critical comments. T major criticism made was that many students were too melodramatic in their presentations and had too much "sameness" in their writing. In somewhat like manner, we dealt with Desire Under the Elms, rewriting scenes in standard accepted English (Students were stymied at first by O"Neill's use of the quaint, unfamiliar rural New England speech,) dramatizing favorite scenes, and converting scenes from O'Neill's play into a short story form and from Lawrence's short story to play form. Because this latter activity called for students' knowledge and understanding of the works as well as of the structure of both the short story and the dramatic form, this latter assignment presented somewhat of a challenge to the students. Nevertheless, they labored and struggle with it, finally, coming up with some fair adaptations in each medium. We also spent much time on the CRG writing supplement which gave valuable suggestions for descriptive writing using materials from Desire Under the Elms.

In the third section "Love and Family", we concerned ourselves wi

the different perspectives of love and viewed within the confines of the smallest social unit, the family group. I used tape recording (CR(of William Yeat's and Dylan Thomas' accounts of their childhood to ge students to talk about their recollections of early childhood. They also wrote about them. From there, we went to Frank O'Connor's "My Oedipus Complex" which led to the discussion of the effect on childre and family life when there is no father present or evident. In this connection, students discussed various sociological studies that they had read or studied earlier which explored the high incidence of fath less homes in Negro families. In the mimeographed excerpt from Mrs. Medgar Evers' McCall's article "For Us The Living", we considered the impact of death, sudden or otherwise, upon the family unit. Students recalled, both in oral and written expression, their own tragic experiences as well as those of others that they knew or read about. Too, they made parallels between Mrs. Evers' experience and those of the families of the Kennedy brothers and Martin Luther King.

At this point, we are working on Death Be Not Proud by John Gunt as a substitute for James Agee's A Death in the Family, a book which was not available to us. I plan to follow through on the suggestions in the CRG unit as well as with ideas and suggestions from the studen For the next four weeks, I hope to complete the section on "Love and Family" and conclude the unit with "Love and Society", a section which examines how the society in which one lives shapes and often perverts the expression of love.

Chamber Theatre proved an excellent practice for maintaining interest, for understanding point of view and for understanding characterization

Chamber theater proved an excellent practice for maintaining interest, for understanding point of view and for understanding characterization. The regular program teaches analyzation of the elements of fiction through use of guidelines for writing, since one critical problem of most of the students is that of expressing their ideas in a written reaction. However there is a virtality among students in chamber theater that is sometimes missing in written accounts but this vitality is never carried over into written accounts after chamber theater is done.

Chamber theater caused a spirit of competition for best performances. Students themselves often determined when to use chamber theater by making requests for and by determining passages for dramatization. Several students had dramatic interest and this exercise of ability added interest when interest in discussion had waned. Upward Bound students in both sections were used to help teach the chamber theater technique to other students. This experience allowed students to become acquainted with each other as persons and with the talents of each other. Students who were poor readers would diligently read and reread their parts so as not to perform poorly before their critical but tolerant peers.

Other methods used includes discussion, lectures, reports and debates. By far discussion was the most chiefly used method.

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"Chamber Theater", one of the practices of the project, was used quite effectively in helping students to join a keener insight in works of fiction. The students did Chamber Theater by enacting lines from several novels and short stories. They acted out lines from Joyce's "The Boarding House" with much success and enthusiasm. First after reading "The Boarding House" and discussing the story and main characters, many of the students did not seem to fully understand the role played by Polly in her relationship with Mr. Doran. But after a group of students attempted to

enter the world of these characters, by assuming their voices, using their language, and expressing their lines, plus demonstrating appropriate jestures and actions, the class readily did a reappraisal of Polly. Polly who had been seen as overprotected and somewhat helpless, because enticing, flippant, and unarming.

Students in the regular program will probably be required to show their understanding of situations or of characterization by being asked to write a character sketch, a report, or a review of the work without any further effort to insure deeper understanding.

Asalean Springfield
Ideas and Their Expression
Tennessee A&I State University

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. . . Much of Carolyn Fitchett's Chamber Theater Unit. I am convinced that this technique makes reading a pleasure instead of the "chore" that students in the regular program made it. There was some difficulty in distinguishing between drama and Chamber Theater at first, but no longer. The students admitted that it, (C. Theater), is helpful and enjoyable. . . .

I assigned five groups a short story to read, discuss and write Chamber scripts from. One would have thought the students were competing for Oscars. They were all over the campus, (even in the main auditorium on stage), rehearsing. They made properties, costumes, etc. The outcome was unbelievable. The short stories were not easily interpreted ones either.

Erma C. Dozier
Ideas and Their Expression
Tennessee A&I State University

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The Chamber Theatre techniques, and, in fact, any type of dramatization, seem to appeal to the average freshman; he likes activity. I have used this technique, which on our campus, I am sure, is a method peculiar to our program, as a means of giving students insight into voice, an understanding of characterizations, and the authors' meaning. This procedure is usually appealing, as well as helpful. Students often ask for assignments involving dramatizations and volunteer to do extra assignments in this area.

One example of this was evident in the reading of Shirley Jackson's short story, "The Lottery." The stoning incident

impressed them deeply: the senseless brutality of it, the stupidity of the people who upheld it, and the scapegoat idea. The latter idea especially appealed to them for in it they saw a relevance to their own racial experiences. After discussing "The Lottery," we compared passages from it with the stoning passage from Kazantzakes' novel, Zorba the Greek. After class three young ladies who had not read the novel or seen the movie asked it they could read it and dramatize this scene and others they liked for the class. They did a rather convincing dramatization. At least they were motivated to read the novel and work out a presentation on their own.

Francis Austin
Ideas and Their Expression
Southern University

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As opposed to only the straight lecture method used in the regular program, several more engaging practices are integral components of TCCP methodology. Dramatizations, Chamber Theatre performances, and pantomines seem to have the most appeal for students; all three encourage student involvement in project activities, as well as inspire self-confidence in oneself. My students enjoyed the class periods which gave them the opportunity to act. Of the three, Chamber Theatre was the most difficult for students to master. Many did not grasp the difference between preparing a Chamber Theatre presentation and just "haming it up" before the class; others saw the practice as an end in itself and not as a reading aid. Finally, I think, the idea has meaning for the majority of the students. At any rate, I can say that usage of the technique resulted in closer, more careful reading--at least of those materials with which we employed it. I am not certain of the extent to which some kind of carry-over exists. . . .

The second such activity happened only recently. I introduced Ellison's Invisible Man with a passage from the "Prologue" to be worked into a Chamber Theatre performance. That went over successfully. Then I had students read the "Prologue." During the class discussion which followed, I soon realized that the kinds of things I saw in references and phrases were lost on students. We were talking about "a" man underground and "the" underground man. I could not successfully do the books the way I saw it, and I could not honestly do the book the way they saw it. Invisible Man is so marvelously complex and intriguing as a fictional work operating on many levels and incorporating many literary traditions that I could only discontinue the class work and admit to "getting in over my head.

Thadious Davis
Ideas and Their Expression
Southern University

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The techniques employed in the program are flexible enough to allow changes. For example, a combination of "Chamber Theater" and "Voice Workshop" made an interesting activity in introducing poetry. Students dramatized many ballads and narrative poems. Later, we used recordings of popular songs with the lyrics mimeographed. Sometimes the poems were discussed without either dramatization or poems. These changes prevent over emphasizing any one technique.

The students presented the chapter in a dramatic skit (Go Tell It On The Mountain, Part III - "The Threshing Floor"). The scene includes a group of "saints," the congregation, a minister, and John, the central figure. The preacher uses the original script for his sermon. Appropriate passages from the beginning of Page 193 and continuing until John's conversion are used with alternate voices of John and the saints interspersed to heighten the tension and secure the emotional impact. Many of the stylistic devices which Baldwin uses are evidenced in this passage and helped to achieve the rhythmic pattern for the sermon. John's voice is used where ever necessary to convey his feeling of anguish, rebellion and a final outburst of joyous submission to the holy ghost. The voices of the "saints" and the congregation follow him throughout this inner struggle with intermittent songs and cries of encouragement.

The discussion following the presentation centers around the following:

1. Evidence which shows the influence of religion in the novel

2. Impact of the blues and spirituals

3. Poetic devices used in the narrative

4. Uses of symbolism

Missouri Torrence
Dorothy R. Simpson
Ideas and Their Expression
Alabama A & M College

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There were school passages taken from Manchild in the Promise Land. The Chamber Theatre Technique was used in dramatizing these parts. The T.V. set and recording equipment were set up in class and as each student performed he was taped. After the performances the scenes were re-played. The class gave criticisms and discussed how to improve their performances. It worked out well.

Dorothy Lee
Ideas and Their Expression
Voorhees College

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Chamber theatre or the reading of plays aloud they found enjoyable, but it seemed that they held it apart from what we "normaly" did. The writing that came from these attempts was generally awful. For the sake of sanity it was necessary to maintain a relatively conventional classroom atmosphere with the majority of the time being spent in very fruitful discussions of the materials. The writing that came out of these discussions though was seldom spontaneous or inspired.

Jon Woodson
Humanities
Lincoln University

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There are students in the various classes who have enjoyed and benefitted from "Chamber Theatre," and from other dramatizations to the extent that they have asked for more. However, I feel that most effective have been our discussions, including those following dramatizations. Students have become critical in their listening. Evidence of this is that they have challenged each other and the teacher. Most of them have become more efficient in supporting their stances with relevant ideas from reading materials and other experiences.

Inez R. Morris
Ideas and Their Expression
Jackson State College

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There is no question that the techniques employed in the project - dramatizations, verbal discussions, creative writing, Chamber Theatre - are far superior to those in the regular program in achieving student goals. To support this affirmation I shall cite one

Thirteen-College Curriculum Program technique, and that technique is Chamber Theatre. A reading technique, Chamber Theatre involves the student in the project, teaches him a basic skill -- reading, helps him learn something important in "Ideas and Their Expression," and encourages positive attitudes towards oneself and learning.

Chamber Theatre helps the student read more perceptively and comprehensively in that he becomes more aware of the role of the narrator and his relationship to the characters. With Chamber Theatre the student sees the characters through the eyes of the narrator, who, of course, does the manipulating. In dividing the lines, locating the narrator, selecting props, writing the script, and directing the scene, the student is completely involved in the project; is helped with his reading because once he has gone through this process, he will never read quite the same again. . .

Ruth A. Perry
Ideas and Their Expression
Norfolk State College

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We prepared Chamber Theatre excerpts from Connecticut Yankee, hoping they would help to depict the satiric intent of the work. This was not only a failure, but it was a complete disaster. I suspect a part of this was the fact that students do not understand the true intent of satire, especially when it involves exaggeration of the action to show why the action is funny. "Drilling the King" should have offered a marvelous opportunity, but the King simply did not manuever his actions to appear ridiculous.

Mary L. Blackstock
Humanities
Florida A & M University

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Incidentally, I couldn't even sell Chamber Theatre to them in the excerpts that I used from the unit. For that matter, it appears that I haven't had too much success with these two classes in Chamber Theatre this year; I fear the reason is that they associate Chamber Theatre with "Outpost of Progress", the first work that I tried it with and the only work that they heartily disliked. Next year I will introduce Chamber Theatre with a short story or novel that my students like and enjoy, definitely not with "Outpost of Progress" unless it ranks higher with them. I was a little more successful with using Chamber Theatre with Invisible Man, but not

too much so. The students enjoyed more talking about the content of the material from the excerpts, and some proceeded to read the entire book. We closed this section by students writing possible alternatives to the question as to what Ellison did when he "came out of the hole".

Louise Stokes
Ideas and Their Expression
Norfolk State College

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I have not been tempted to experiment with the chamber theatre or other techniques employed in the first-year English course. My students have expressed, more than once, a preference for formats that fit their preconceptions of what a college class should be like. I think this is no reflection on the success of innovative techniques that they had a part in last year, but rather the result of their sense of having graduated from that course now being taught to other freshmen, while they are ready to move on to something else.

Mark W. Booth
Humanities
Norfolk State College

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Most of my success and/or failures came about as a result of my methods of introducing a particular unit or work. Last year I almost completely "goofed" on the short story "Impulse" because I attempted to use the "Chamber Theater" approach. I discovered that it was not as easy for me to explain to my students as Carolyn Fitchett did with hers. So I had to immediately reach into my bag for some tricks that would regain the interest of my class. But I am bold and after I attended another "Chamber Theater" workshop this summer, I tackled the technique again. This time it was with the novel Rise of Silas Lapham, and it worked perfectly. I realized that the first time I was unsure and uncomfortable with it,and the second time my determination and Carolyn's reassurance over the summer won the students' interest.

B. Dilla Buckner
Humanities
Jackson State College

To abstract a mathematical structure from a real situation is far more important than just understanding the concept involved.

...As a high school teacher, I taught the full range of mathematics courses--honors, regular, remedial, and I never could get any kind of enthusiasm up about going into anything but the best classes. I don't mean that I resented the other classes; I just didn't enjoy teaching them. Well, guess what? I thoroughly enjoy it mathematically, as well as otherwise. . . .

Problems without answers are unheard of the regular program. (Professors would be embarrassed to tears, in many instances, to be unable to supply an answer to a problem which they had assigned to a student.) Time to discover things for yourself is unheard of in the regular program. Ditto--time to do anything but manipulate formulas, and come up with answeres. Our teachers in the regular program are required to 'cover' certain units whether their students are able to comprehend or not. SAD! . . .

One of the most successful teachers of modern mathematical times is Moore from the University of Texas, and many graduate courses styled in the Moore image are called 'Texas Style' courses. The course which I try to teach is a physically-oriented course styled in the same manner as Moore's theoretical courses. I personally think this style course is just as high-powered and motivating for non-math majors as is Moore's course for the mathematically talented. I think that teachers of non-math majors are willing to admit that most of the mathematics taught in the ordinary math classes is completely irrelevant to most of their students. It is doubtful mathematics professors who teach higher level mathematics will ever admit to the foregoing statement. They too often mark these students off as failures, ill-prepared to cope with college mathematics. (If you doubt this, check the percentage of failures in the low-key math courses in average large universities. These statments too often apply to graduate assistants teaching these courses also.) I think this course is great, especially for elementary education majors, but should be extended to two years, so that more content could be introduced in the same manner.

Johnsie Posey
Quantitative Thinking
Southern University

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Each teacher of Quantative and Analytical Thinking was permitted to structure his own course from the many short units developed during the last two years. In developing this course, I have not tried to include all the specific topics that are usually taught in such a freshman course. Instead, I have selected units that will: first, illustrate the intuitive, inductive and deductive methods for investigating or analyzing things or situations; second, interest and involve the students; third, begin with real and abstract situation that the students understand; and fourth, help students understand important concepts in mathematics.

In the regular program, these general methods are not kept before the students as they are in this program. In fact, in most classes, the students are so involved with specifics they do not realize that they are using these methods. This means that they are missing that part of mathematics that contributes most to their overall development.

Since an intuitive knowledge of pattern is necessary for incudtion and since induction helps supply the generalizations for deduction, it is natural to start with the intuitive method and end with the deductive method. Since the computer was a very useful tool in handling large quantities of specific data, a brief study of Fortran followed the inductive method.

I have also found that it is easier to get the students interested and involved in a problem if it evolves from a real situation. To abstract a mathematical structure from a real situation is far more important than just understanding the concept involved. It implies that the student has acquired techniques for investigating real situations.

Bernis Barnes
Quantitative Thinking
Jackson State College

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The approach in mathematics was through games and situations involving the handling of physical objects. Questions were then raised concerning certain aspects of the game or situation and students were encouraged to seek answers. In the beginning, students were inclined to sit back and say, "Tell me the answers." When they finally realized that they were not going to get 'the answer' from the teacher, they began to try to guess a solution to the problem involved. And even though they might not have found an answer themselves, they were quick to recognize when a suggested answer seemed ridiculous. This caused the students to

carefully weigh the facts before offering a 'solution'. When a "correct answer" was obtained, where a correct answer was possible, the student who gave it was asked to tell or demonstrate to the class how he arrived at his decision. Thus competition was engendered and encouraged. Students were permitted to work in small groups when a common interest was shared and encouraged to delve deeply into areas of special interest. The sutdents in the program were especially pleased when they discovered that they possessed knowledge or a skill which fresmen students in the regular college program did not have, even math majors. This particular discovery did much to dispel their earlier fears that they would be behind students in the regular program. Several of the students in my sections had roommates in the regular program who were math majors and constantly challenged them on the basis of some concept discovered or learned in class. The students have indicated approval of the methods used and are concerned that next year they will be restricted by the force-feeding lecture method of the regular college program. At a faculty meeting of the program instructors attended by the president of the university, a student who was present informed him that "I really appreciate this program because it makes learning exciting." Another student told a representative from the U. S. Office of Education who visited the campus that "This program has convinced me that I have the ability to do college work. I honestly didn't think that I was college material." Statements such as these cause me to feel that we are meeting the student goals determined for the program.

Calvin Browne
Quantitative Thinking
Tennessee State University

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The students are usually in suspense about what is going to happen in a particular unit. There is no set way to determine what mathematics they will learn first. One class may do equations before they do logarithms or vice versa. The important thing is that they know they will learn something important about the subject. This, in effect, allows students to do some discovery of mathematical principles rather than having them start with the symbolism and framework already set. When they realize that they have come up with a relationship which describes a certain mathematical pattern they feel quite excited about sharing it. Usually we name their discovered relationship after the student who made the discovery. They take great pride in themselves for being so smart. They begin to develop positive attitudes towards themselves and learning.

Since the mathematics curriculum does not follow any sequence

of topics or units it is quite possible that we may discuss such topis as logic, probability and statistics, or logarithms during the year and the regular freshman mathematics classes may not get to these topics by the end of the year because they usually follow the sequence prescribed by the textbook. These topics are usually found at the end.

Instead of listing all the basic skills needed to do the "hard stuff" and working on skills first, we discussed the "hard stuff". The advantage of this was that the students were able to discover their difficulties right away, and they felt a need to develop these skills so they could tackle the "hard stuff". The more sophisticated topics like natrix addition and multiplication allows students to learn the fundamental skills by doing a new kind of operation. They don't feel that the fundamental operations on decimals, fractions, integers, etc. are boring because they are not doing the same old problems the same old way. Example:

$$\begin{bmatrix} 2 & -3 \\ -4 & 1 \end{bmatrix} \begin{bmatrix} \frac{1}{2} & \frac{7}{8} \\ \frac{13}{4} & 3 \end{bmatrix}, \quad \begin{bmatrix} 5.06 & .2 \\ .001 & -10 \end{bmatrix} \times \begin{bmatrix} 12.4 & 0 \\ -.5 & 1.7 \end{bmatrix}$$

In matrix multiplication students must concentrate on doing two operations, multiplication and addition to get their result. Students find that learning basic skills is exciting when they do it this way.

Mathematical research papers written by students have enabled them to realize that they can not only do research in English and history but also in Mathematics. Very few such activities are executed in the regular curriculum in Mathematics. First of all, the heavy load does not allow enough time for teachers to work closely with students writing research papers nor is there sufficient time provided for reading them. One of the most positive aspects about the project is that it allows the teacher this freedom in working closely with students.

Carolyn O. Chesson
Quantitative Thinking
Norfolk State College

"Guess my rule" is one of the best games.

It led to the concepts of domain, range

and function very nicely.

Roger Ingraham
Quantitative Thinking
Bennett College

Some of the units in Quantitative and Analytical Thinking which began in apparent non-mathematical contexts and led to mathematics, or which began in mathematical context in which the students were already involved follow:

1. Looney graphs: began as a puzzle or guessing game but in the end led to equations for straight lines, parabolas, cubics, circles, ellipses, absolute value functions, intervals, etc. It was a good unit and with only a few changes and extensions I will use it again. (It was excellent for teaching graphing to both those students who had experience with graphing and those who could not even plot a point on a graph.)

2. Hanging over began with a situation, stacking rulers so that they extend over a ledge as far as possible and led to infinite series and some experimenting with convergence and divergence. This unit was a natural but, as I've written before, not enough was done to get them firmly into the mathematics so they would retain what they'd discovered.

3. Guess my rule is one of the best games. It led to the concepts of domain, range and function very nicely. It worked a second time to begin the unit on finite differences. The students really wanted a more systematic way to find the rule than plain guessing, and finite differences was their satisfaction.

4. Backing into logarithms began with computations of a table of powers of two using the electronic calculator and led into logarithms of different bases (mostly 10). It was a little difficult to convince the students of the need for logs (they weren't called logs) even by virtue of the fact that it simplified extremely messy arithmetic. If we had already done computer programming I'm sure they would have bought my arguments and I would have not done logs!

5. Switches and Batteries. At this point I count this as one of the most successful of the units. It began with a physical

problem--making a lamp light using batteries and wire, and then with switches. Ultimately it led to Boolean Algebra, and from there to symbolic logic and then to valid and fallacious arguments. And at each point there was a one-to-one correspondence with switch circuits. (Students took the equipment home with them and designing various circuits such as a light controlled independently from two switches. I put the kit together at a local electronics supply house and purchased it with 13-CCP funds. It consisted of 50 batteries, 25 lamp holders, 200 feet of wire, 100 switches, and tools.)

6. Trigonometry. Although this unit began with measuring the heights of inaccessible objects, the transfer from the physical problem to the mathematics was never as nice as with the unit: Switches and Batteries. I feel too much has to be "forced" or suggested. (The Bennett College flagpole, the Chapel Steeple and the power plant chimney were all inaccessible objects for height measurements in the unit. A challenge was posed in which a window sill (i.e. dorm window) a ruler and a protractor were all that were necessary to determine the height of the Bennett flagpole (one student succeeded). The unit on trigonometry was more traditional in its development than any of the others. It was also the subject the students liked least. It got closer to lectures than any of the others. Besides measuring inaccessible objects, and talked about dogru's (a new kind of angle measure), I think that the girls just were not interested in any of the applications of the subject even though it related directly to their physics course. I do not feel I succeeded with that unit either because of the style which was less than discovery method or their lack of interest or both.)

7. Crazy dice, Random numbers, probability and statistics is one of the last units we <u>will</u> be doing.

8. Estimating large numbers. Began with open ended questions i.e. How much rain falls on the roof of the Science Building in an hour or day or year? Or if, as I heard yesterday on T.V., a child drinks 15,000 glasses of milk before he grows up, how many cows are there in America? The success of these questions depend very much on the mood of the students. They tended not to take them seriously, and I don't count myself too successful with them this year. I seemed to have more success last year at Voorhees. (The number of steps on the stairway between two floors of the Science Building was also a problem in estimation.)

9. The four fours problem was a real challenge to the students. The most difficult challenge was to express 19 as a mathematical combination of four fours. It was several weeks after we had finished the mini unit before anyone found an answer (I wouldn't give it to them); and then several came in. It provided good practice

with basic operations but did not insult the students. The same is true of the next unit.

10. Continued fractions was a card game which "degenerated" into a mathematical discussion about continued fractions and infinite continued fractions. This, too, provided arithmetic practice as well as introduced a new way to compute the square root of 2.

11. Pascal's triangle, though not a unit itself made it's appearance over and over in set theory, in algebra, in a networks problem (and it will again, I suppose, in probability). This served to get the students interested in generalizing it. It happened one day in an accidental way and the result was the binomial theorem. (See Journey into Discovery, pp. 11-13.)

12. IBM 1050 Time Sharing Computer and IBM 29 Card Punch Machine. The 1050 is rented from IBM with funds which come from the 13-CCP (about ½ cost) and from the college, the math department budget. Time sharing computing is in use in the courses of many of the other 13-CCP colleges. Although most of them work with General Electric and not IBM. The card punch machine is rented by the business department and we use it by their grace.

The computer proved to be highly motivational independent of anything I, the instructor, did; although I made it relevant to the course by including problems related to trigonometry, the unit on logs, infinite series, functions and graphing which we had dealt with earlier. The students (girls!) were fascinated by the idea of a simple dating program I showed them. (The electronic calculator has proved quite useful for units such as backing into logarithms in which a lot of calculations are required. It is also fun for students to play with. It served as good will equipment for the program, it is available for use by all students and faculty, being located in the mathematics office.)

13. Compasses, protractors and rulers. Bought with 13-CCP funds, are generally used in the project, for all students. (trigonometry, geometry and inf. series)

14. Most of the games (one to four of each) listed were used outside of class to provoke students and to get them involved in individual investigations. Sometimes the students just carried them home and played them in the dormitories. Results were varied. A few students carried investigations quite far (i.e. Qubic); others just played them for fun.

Napier's Bones - homemade (paper).

Cuisinaire rods

Colored Cubes - (probability) 13-CCP funds (2 boxes)

Games, all purchased by 13-CCP, in quantities of 1 to 4.

Dr. Nim
Instant Insanity
American Can Co.
Puzzles (free from CRG)
Qubic (3-D Tic-Tac-Toe)
Tower of Hanoi
Triangle Peg Puzzle
Tan grams
Hi-Q
Stratego
Peg-Jump Puzzle
Avalanche

15. I found no textbook which really suited the needs and the spirit of Quantitative and Analytical Thinking. Thus no general text was used throughout the year by all of the students. Several paperbacks as opposed to one hard cover text would be the best approach in a course which stresses flexibility, a discovery approach and situation-game beginnings to mathematical topics. Without a text it was necessary to provide hand outs and the students had to rely more on their notes. The students could not rely on a text for their final belief in a mathematical principle (although several complained that they wished they could) and were forced more to depend on their own thought and insights. It was also easier to be much freer in the use of notation - employing notation-employing notation which was developed or adopted by the class naturally.

The following written materials were used in the classroom 1968-1969. All were provided at no expense to the students. Items 2, 3, and 4 were purchased by the program.

Morris Kline, Mathematics for Liberal Arts, Chap. 1 "Why Mathematics?" (mimeo). For all students.

Courant & Robbins, What is Mathematics? For math majors, especially (also in use at Voorhees)

Margaret Willerding, Mathematical Concepts: An Historical Approach. paperback. For all students.

Robert Christian, A Brief Trigonometry. paperback. For all students, also in use in the regular program.

Preface to PL1 Programming in Scientific Computing (IBM) Used by All students (obtained free from IBM)

A number of works were also available to students for reference either through my office library or reference books owned by the program kept either in my office or in the program library in Carnegie Hall.

D.E. Smith, A History of Mathematics Vols. I and II.

Kasner & Newman, Mathematics and the Imagination.

Stein, Mathematics, The Man-Made Universe.

Reid, From Zero to Infinity.

Mathematics in the Modern World published by Scientific American.

The World of Mathematics ed. Newman.

Baker, Dictionary of Mathematics.

I. Adler, Probability & Statistics for Everyman.

CRG Handbook of Mathematics.

Ploski & Brown,ed., The Negro Almanac.

Colin Legum ed., Africa: A Handbook to the Continent.

Mehlenbacher, Foundations of Modern Mathematics.

Horner, A Survey of College Mathematics.

Horner, Trigonometry: A Study of Certain Real Functions.

Copeland, Mathematics & the Elementary Teacher.

Brumfiel, Principles of Arithmetic.

Vance, Unified Algebra & Trigonometry.

Robinson, Modern Algebra & Trigonometry.

Willoughby, Probability & Statistics.

<u>The topic most acclaimed successful by students was the study and use of the time-sharing computer terminals.</u>

The topic most acclaimed successful by students was the study and use of the time-sharing computer terminals. Students learned BASIC computer language, and then operated the computer as they ran sample programs and original program which they had written themselves. The computer's demand for precise language is indicated in the following student's statement "You know, one little star messed me up. It kept saying - I couldn't think - It kept saying - LINE 30 INCORRECT FORMAT - until I figured out I needed a star" (to indicate multiplication as a computer operation). Students interpreted model programs, such as shown in Appendix VII, predicted what they would do, thus, ran them (or saw someone else's print out) to confirm the outcomes. After discussion and practice with the model programs most students wrote one or several programs of their own. One student who over a period of a week and a half developed, with assistance, a program to find perfect numbers ran his program. After the computer had printed out 6, 24, 28, 496 it hummed for minutes but typed no further numbers. (A "perfect number" is a counting number which id equal to the sum of its proper divisors (6=1+2+3). Note 24 is spurious to this particular program being equal to the sum 1+2+3+4+6+8 omitting 12.) The student sat at the teletype and said, "It's working." "If I get one more number I'll stop". "If it only prints one more number". After some 12 minutes of what must have been central computer time it was decided that he should stop the operation and either find a more efficient program or research in the library to find if there was a higher perfect number. The student did determine that there was no perfect number from 496 to over 8,000. He found in references that the next perfect number that he was looking for did exist and is 8128.

. . . Student opinions concerning the most worthwhile of the year's topics - placed the computer in a predominant lead. Comments included "I think that is something exciting to be working with computers," and "I would not change the . . . computer programming because a student will need this in his future." The next most worthwhile topic was Fractions followed by Trigonometry, Linear Equations, Problem Solving, Shapely Bottles and Formulating Formulas. The two topics rated least worthwhile were Coordinat Tic Tac Toe and Shapely Bottles. Tic Tac Toe was criticized because "when you play Tic Tac Toe . . . you lose interest" and Shapely Bottles

was criticized because" . . . I doubt if anyone will be concerned about the shape of a bottle."

Carl Whitman
Quantitative Thinking
Florida A & M University

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The difficulty students had with programming in Fortran took most of the glamour out of the computer classes. This part of the course was not as successful as it was last year. The students had a more difficult time learning to write simple loops.

Bernis Barnes
Quantitative Thinking
Jackson State College

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At the beginning of the last six weeks, we received our G. E. Time Sharing Computer. Of all the equipment used, I believed it was engaged most by all of the students. Before the computer was installed, the students were taught the Basic Language which is very simple. The students were not as enthused at the beginning because they had to be very careful in writing the programs. Some of them would forget the commas, numberlines, and other things that would make the computer reject their program. After a little practice they became very interested in it. We had just completed the unit on solving linear equations by using matrices. The students had a terrible time trying to find the inverse of matrices of dimension greater than two. The first program the students wrote was on solving linear equations. It was so simple and fast that the students could hardly believe it. These students were the ones in my class that were very interested in the computer and could write a program on most any topic that we had discussed in class.

Margaret Artis
Quantitative Thinking
North Carolina A & T
State University

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I really don't know whether this should be phrased as a question or a comment. Some of the colleges were able to secure computers for use of the program. As important as the computer is becoming in all phases of our lives and as valuable as it is as an

educational too, why can't the computer be made available to all of the colleges?

Calvin B. Browne
Quantitative Thinking
Tennessee State University

After several attempts students were able to theorize as to how far they should be able to suspend the top ruler

One activity that particularly impressed me was based on a unit written by Jack Alexander and conducted by him on a visit here. This is a unit where rulers are projected out over the edge of a desk,,the idea being to actually suspend the top ruler so that it is completely beyond the edge of the desk. After several attempts students were able to theorize as to how far they should be able to suspend the top ruler. There was much competition between the students and the activity was varied by attempting to get the maximum distance for a particular number of rulers; i.e. three, four, five, etc. The record for each was recorded on the chalkboard and students were continually trying to set new records. This activity was very satisfying, perhaps because Jack brings such infectious enthusiasm into the classroom. The students learned that theoretical results and actual results may be different and that variables affecting an experiment must be taken into consideration.

Another activity that was impressive occured during our study of sets and subsets. The students were given a number of different colored cubes and asked to find all poesible arrangements using two, three, four, up to the total number that they had. In each instance they found more arrangements than they had anticipated. By making a list of the number of arrangements for various numbers they were able to derive a general formula which would permit them to predict the arrangements for any number of blocks. As one students observed, "I never would have believed this if I had not done it myself."

To introduce the idea of probability we uded one and two regular dice. Being able to predict the probability of getting a certain number on a throw proved interesting to the students. From this they predicted the probability of certain numbers using five, eight, or twelve-sided dice. That the probability would vary so much was particularly fascinating.to all the students, both to the boys who were familiar with the use of dice and the girls who wanted detailed information on how to win or lose at dice. This unit probably generated so much enthusiasm because the idea of using dice in the classroom was so foreign to normal procedure.

Calvin B. Browne
Quantitative Thinking
Tennessee State University

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Schaum's Outline Series First Year College Mathematics was used for a reference book. Absolutely no part was used as a text book. It simply gave students a reference book in hand. Material for classroom activities was taken from 'ideas' generated by units designed for the Thirteen-College Curriculum Program. No unit was used in whole, as written but questions, problems, and ideas were taken from a wealth of materia Basically, problems were used that were generated by student questions and the teacher's own evaluation of what concepts were especially need or wanted by the students. The course this year resembles in substance the course taught last year, but was significantly different, in that the students were not of as high a level of command of mathematics as were last years students.

Our office is used as a laboratory for everything except science and English. It is sometimes 'hectic' to try to work, but I guess I wouldn't change it, except to make the office larger. We have trouble making reference books available to students because they disappear if we let them out on open shelves. This is probably a good sign, but a little expensive as a general practice.

We used the school's T.V. laboratory for taping an experimental test. We used many physical objects and games to study the mathematical concepts. Examples: colored cubes, batteries and switches, geo-boards, peg games, many non-physical type problems and games, such as the Fibbonacci series problems, tic-tac-toe, student-made slide rules. Many single games were left on a 'game table' at all times. Unfortunately, they were well-used, mostly by sophomores. I asked why, and relax and play. They felt their schedules were very severe! I question this. I think I had almost no mathematically oriented students this year, and that SLOW PATIENT approaches to mathematics is JUST NOW beginning to pay off in a few instances. I think many of my students have learned a lot but they had SO MUCH to learn, that I am afraid it doesn't look like much.

At all times, there are a variety of mathematical problems in the hands of the students, These originate, when possible, with the student However, I have lists of problems, covering almost every possible mathematical concept, which individual students work on, and present to the class. These lists are used in lieu of student originated problems, when there are none of these available to the class. Here are typical units which I have used.

Tic-Tac-Toe -- into the plane via a game-graphing points, linear equations, quadratic equations, (some few of higher order). This is the first unit I use, and the students seem to get the idea immediately that there is something new in the manner of presentation of the mathematics that they are to learn.

Guess my rule seems to create a lot of interest. The students are anxious to find out how to guess the answer. This brings up a study of functions, relations, linear equations, quadratic equations, graphing,

and symmetric finite differences.

Games. I use games every time that I can to open the way to mathematics of a higher order. For example, the peg problem, which introduces the idea of trying to pin down a formula for a sequence.

Batteries and Switches. My students were enrolled in physics the first semester. This meant that I had to do the batteries and switches unit much earlier in the year than I had last year. I feel this was the main reason that it was not as successful as it had been. This unit gave a feeling for physically related mathematics. It also serves as an introduction to the field of logic, truth tables, the logical meaning of the words 'and', 'or'. and 'if then', as well as negations, and proofs.

Slide Rule. We make our own slide rule from scratch, and as a result, get a great deal of practice using exponents, logarithms, non-linear interpolations, (squeezing in on the answer, a limiting process) This unit also gives practice in fractions, irrationality of numbers, square roots, functions on rectangular and semi-log paper, as well as as introduction to the use of the slide rule itself.

Testing. I use new and unrehearsed mathematical problems, real life oriented where possible, which require analytical thinking, as well as mathematical skills. Tests are used to increase grade points, but are not used as a whipping post. I do not deduct from a student's classroom grade unless he makes absolutely no progress on testing.

I recently introduced a problem, which asked the question, "What is the area of the figure formed in the following way?" I did not have a single student who could tell me what the word area even 'implied' I had answers similar to this: It means length, width, and height. In trying to pull the answer out, I found people who "knew the formulas" for certain kinds of areas, triangles, rectangles, etc., but not a single student could tell me what these formula measured. One student knew that the formula for the area of a circle had a PI in it, but he didn't know exactly what the formula was, and hadn't the vaguest idea what PI was. Of these 50 students, some had obviously been exposed to area. I am quite sure that at least a few of them had intensive drill in this phase of formula solving. Where did it go wrong? I used Geo-Boards to try to get the concept of area over to these students. They thoroughly enjoyed using these boards. I did not stress formula solving techniques, and I do not know whether I made it relevant to them or no I guess only their next mathematics teacher of area will be able to answer that for me.

Early ih March a student said he would like to make a statement. It was done in a very nice manner, but it was almost in ultimatum form "I'd like to get on with this class, and learn some Trigonometry." I said I would be happy to teach some Trig, if it was the concensus of

the class that Trig was what they wanted to do. I got over a ninety per-cent YES, even after I had explained that lecturing was about the only way I knew to actually teach the Trig which they were asking for. I told them we would have Trig until the majority of the class voted to change the subject, and that it would take me at least six weeks to "teach" the Trigonometric concept. This lasted for about two and a half weeks, Unfortunately, I had lost all but about five. So-we went on to more productive areas. At least the one student who wanted the trig to begin with is studying on his own, with help from me. I don't know the solution to this type of teaching situation, in which students backgrounds, needs, and desires are so completely different.

Johnsie Posie
Quantitative Thinking
Southern University

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Developing Mathematics From Non-Mathematical Contexts

Early in the course the need and convenience of mathematical symbolism was developed by investigating puzzling topics. Their solutions could be discovered by the students and expresses most conveniently using algebraic formulas. For instance, the American Can Company array of squares gave rise to a formula for the number of one can see in an "n" by "n" array of squares as:

$$(\text{Number can see}) = n^2 + (n-1)^2 + (n-2)^2 + \ldots\ldots 4+1$$

Figurate numbers gave rise to a recursive formula for the nth Fibonacci number, f_n, as: $f_n = f_{(n-1)} + f_{(n-2)}$. Geoboards with their adaptability to discussions of areas and patterns similarly led to algebraic formulas.

Building on this introduction to algebraic formulas as concise symbolic ways of describing patterns we considered the topic - Empirically Derived Functions - in which, for example, the question "guess my rule" for an array of ordered pairs of numbers (2,6) (4,18) (6,38),(,66)...lead to the observations that the nth ordered pair would be (n, $n^2 \pm 2$) and t the rule for (x,y) pairs was that $y=x^2+2$

Graphing, another symbolic method for representing patterns in numerical data, developed from investigations of Shapely Bottles and Student Walks. Ordered pairs of numbers fixed graph points . Then, interpretation of graph lines led to relating the slope of the bottle graph to bottle profiles and slope of the walk-graphs to the velocity of the moving students.

/Teacher Talking Less/

Some preliminary progress was made in structuring situations so that the teacher could remain quiet while the students pursued topics and made gains in these areas. The One Hundred Dot Problem, Counting Games, What's My Set, The American Can Company Puzzle and others were especially successful in this. Attempts to extend this mode of learning using Mini-Topic Investigations were disappointing. Although a number of investigations were well done and exemplified originality, a majority were done superficially. Probably, this was because students failed to perceive these as relevant to themsleves, or perhaps, this was becaude the investigations, as presented, failed to sufficiently guide students toward some type of successful outcome. Madison Project "show-box" investigations were used on a trial basis with a number of students and they proved very successful. These included investigations of the Tower Puzzle, The Peg Puzzle, Washers and Springs, etc. One student was especially satisfied with her investigation of the Tower Puzzle. She said, "I discovered it finally (pronounced final lee) "My roommate wanted to tell me the formula, but I wanted to get it myself. I had to make some mistakes, but I got it "final lee".

Thinking

A major success was to demonstrate to the students that hard thinking and analysis would lead to rewarding generalizations. Lee Evans' game, which we called "What's My Set", was preeminent in this regard. Students reacted to the intensity of concentration by commenting that one had to be careful not to be "break one's brain." Many other topics, emphasized thoughtfulness and pushed students to sort details from persisting patterns in order to formulate generalizations. These included, The Counting Games, The Hundred Dot Problem, Guessing Functions and others.

Graphing

A second area of success was with graphing. As noted above, graphing arose as students represented observations listed to describe the Shapely Bottles and Student Walks phenomena. Ordered number pairs used as names for graphspoints built upon and extended the ordered pairs of Empirically Derived Functions. The bottles and walks gave a real world reference to discussions of mathematical functions and relations.

/Programmed Reviews/

An area of successs in which most students achieved was in developing their mathematical and technical skills. Achievements were very much on an individual basis and measured by tests, available upon student request, to show proficiency in work with fractions, linear equations

quadratic equations, exponents and/or logarithms. Students used the Flexer and Flexer, Programmed Reviews in Mathematics for this work. These generally proved successful, but something more fundamental needs to be done to help the severely handicapped student who has ability, but has extremely poor reading and arithmetic skills.

Dividing the Class

Dividing the class to allow special work with math-science majors and with a liberal education group helped provide students with challenges adapted to their level of preparation. It was difficult working with two groups within the same class, and too many students it seems, coasted through the activities without really becoming challenged. Another year it would be desirable to meet students in these two groups at different times of the week days.

Carl Whitman
Quantitative Thinking
Florida A & M University

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Observe the following example:

Teacher: How many squares do you see?

Student responses:
a. one b. four c. five

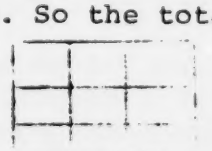
Teacher: Who is correct?

Student responses: All of them.

Teacher: Why?

Students: There are diferent size squares in the figure. The large square can be called a 2 x 2 square -- there is one of these and there are 4 one x one squares. So the total number of squares is 5.

Teacher: How many squares are in this figure?



Student A: There is one 3 x 3 square and nine 1 x 1 squares so altogether there are ten squares.

Student B: But I see some 2 x 2 squares.

Teacher: Where? How many? Student goes to board to point them out using colored chalk.

Student C: But those 2 x 2 squares overlap.

Student D: Should we count the squares if they overlap?

Student B: Yes, if we want to count all the different sizes.

Student E: Let's do it both ways. Count those that overlap, and those that do not overlap.

Student B: Let's count the overlapping ones first.

Overlapping squares:

In 3 x 3 square there are total of 14 different size squares

In 4 x 4 square there are 30

For a 5 x 5 it got more difficult to count because in overlapping squares students had to be sure they did not count a square more than once or that they did not miss any.

One student suggested we make a table and record the results. So we put in the information as follows:

Size Square	total no. of sq.		no. of 1 x 1		no. of 2 x 2		no. of 3 x 3		no. of 4 x 4
2 x 2	5	=	4	+	1				
3 x 3	14	=	9	+	4	+	1		
4 x 4	30	=	16	+	9	+	4	+	1

By this time students began to see a pattern. So for a 5 x 5, without counting all the different squares, you just add 25 to 30 to get 55 the total. So we continued for a 6 x 6.

Teacher: How many different size squares are there in a 100 x 100 square?
(At this point there was silence until one student said we could use the calculator to find the answer.)

Student F: Suppose we didn't have a calculator, how would we find the answer?

Teacher: That's an excellent question. How do you think we could find it?

Student G: I notice that every number in the table is a perfect squa number. So we can add up perfect squares beginning with 1

Tabulation

$$1 = 1^2$$

$$5 = 1^2 + 2^2$$

$$14 = 1^2 + 2^2 + 3^2$$

$$30 = 1^2 + 2^2 + 3^2 + 4^2$$

$$55 = 1^2 + 2^2 + 3^2 + 4^2 + 5^2$$

Teacher: Can you find a relationship between the size of any square and the sum of the squares?

So far, no one has come up with a solution, but some studen are still working on it.

Carolyn O. Chesson
Quantitative Thinking
Norfolk State College

Students in a decentralized classroom are better able to learn what they want and need to learn.

For all but the first two weeks of the school year, mathematical learning has taken place in a "decentralized classroom." The reasons for the decentralized classroom were many.

Students in a decentralized classroom are better able to learn what they want and need to learn. No student is forced to move slowly or speed up in order for a class to stay together. The class was never together in the first place.

Too few of the classrooms in the program are now "decentralized." The program can take little credit for any successful "decentralized" classroom. Instead the program needs to look into the idea of a "decentralized classroom" and create materials for them.

. . . The written materials used were provided by the program for the students. These materials were gathered from various sources. Some came from units produced during the summer conferences, many came from books. Regardless of the source most of the written material given the students was altered by the teacher so that students might better understand the material.

The materials were brought into the classroom at the rate of about one per day. They were then left there for student use. Fifty copies were provided for classroom use. A list of the titles of the materials follows:

100--Bridges of K
101--Diagrams of Networks, Fortrace
103--Cats and dogs
105--Fracing Networks-rules
108--W, G, E.
120--Who know Who--Isomophic Networks
155--Map Coloring (Draw a map that requires 5 colors!)
150--Teaching cigarettes
130--Working Combos (10 men)
160--Setting Combos
125--Another Working Problem (7 men)
3--More on Functions

8--Rules, Number Sequence and Triangles
8--Student Rules
20--Dots and Tunes Leading up to (N)
21--Maximizing Regions
30--Rules
50--Rules (Geometrices Formular)
71--Cutting Paper (Same as 21)
72--Reading Mathematics
74--Graphs, Write Equations
73--Same as (74)
77--Same as 21, 71, with cutting a cake
52--Find all triangle
39--How many Squares?
63--Reading Merry Christmas
80--Short Cuts
200--Circle of 100, Mudulo 3, Who is left?
201--Dart Scoring, Chessboard of Queen
202--Amercon (rearrange to form new patterns)
203--Magic Star
204--A magic Square
209--Another " "
210--Using Four
211--Algebra
216--Some Problems by Connie Holmes
217--The Handcuffed Prisoners
218--Cutting the Pie
220--The Six-Pointed Star
221--Moving Stuff
221--Rowing Over
222--Number Squares
225--River Crossing
230--Heptagon Problem
232--Box Problem
240--Another Box Problem
241--More Algebra
246--6 x 6 (like 201)
253--Coins
255--Things to Do
257--Xing Squares
259--Number Tic-Tac-Toe
260--A few more Problems
263--More Quick Ones
271--More Farm Problems
278--Fast Ones
290--Another Pentagon Star
281--Proof that 1 = 2
282--Coins
285--Coins

286--Making 34
294--Math Tricks
296--Coins
400--Fibonacci Numbers
401--How Many Ways
800--How Many Paths?
1000--Dice
1003--Permutations
1005--Combinations
1006--More Dressing
1010--Committee
1020--Mailing Letters
1022--Making Plates
1100--Eight Queens
1109--Making Numbers
1200--Programming
1400--Just How Many
1401--The Job Hunt
1405--Congress
1700--A Number
5994--6 peoples, 6 jobs
500--Who Killed Joe Dokes
501--Reasoning
504--A Problem in Logic
510--The Probability of Freedom
511--Yachts
512--Some Logic
513--Most and Strongest
515--A Journey into Doubt
518--Grades
519--Grade Time
520--Oracles
521--Business
525--Who Does What
526--Some Boats
527--Accomplishments
533--This Takes Figuring
534--Mutiny
535--Job Placement
537--Language.
540--More Murder
545--Going Shopping
550--Miss America
552--A Dinner Murder
561--Giving Gifts
571--More Jobs
300--Cryptarithms
301--More Problems

323--Change It
333--Number It
349--Fill It In
249--Fill It In
350--A few Quick Ones
351--More Weighing
352--Weights
359--Figuring
363--Socks
370--A Drinking Problem
374--More Weights
379--Measure for Measure
380--More Pouring
385--Mailing
387--Changing the System
390--A Challenge (Connecting Dots)

Following is a list of equipment used.

1--100 Peg Set
3----- Tantalizers
1----- Instant Insanity
2----- Oh-Wah-Ree
1----- Doctor Nim Game
3----- Avalanches
4----- Chess Sets
2----- Balance Boards
1----- Bridge It
1----- Twixt
1----- Go Set
5----- Geoboards
1----- Think-A-Dot
1----- Quinto
2----- Wff'n Proof
50---- Tower of Honai
25---- Tangrams
50---- Strip Puzzles
1----- Set of Soma Cubes
1----- Logi Quad Game
1----- Logi Quad Puzzle
1----- Set of Attribute Blocks
1----- Dice Puzzle
5----- Hi Q
5----- Even Steven
5----- Sweetheart
1----- Nut and Bolt Puzzle
2----- Double Diamond
2----- Zig Zag

1----- Try it
2----- 3 Square Puzzle
50----- Triangle Puzzles
2----- Tri
3----- Quibic
3----- Picture Cube Puzzles
1----- Set of Cuisenaie Rods
2----- Equations
1----- Tac-Tix
1----- Configurations
1000----- One Inch Cubes
1----- Wang Calculator

John Ernst
Quantitative Thinking
Mary Holmes Junior College

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Within the classroom I avoided the lecture and emphasized the student-teacher and student-student dialog. Many times the class was broken into smaller groups which would engage in some mathematical activity. I could then move from group to group answering questions, injecting new questions to be considered or more apparatus. During the hour the class structure might vary from a single unit with the instructor addressing the whole class (i.e. introducing topics or questions) to small decentralized groups then back together again to tie together some results or get the class as a whole to compare the results of all the groups. Then new directions might be decided upon and the class would go back into groups.

Without very many commitments outside the program (i.e. marriage) it was possible to have a very flexible office hour - conference arrangement. Students could sign up almost anytime of the day and I could meet them. This system was quite successful.

With computer programming unit I actually divided the class into two classes which met according to different schedules. This created classes of only 11 or 12 students. The students told me that they preferred the arrangement because so much individual attention was possible. They wished it could be continued as a permanent arrangement. It worked very well, but even smaller groups would have been better since the availability of the card punch machine was a problem.

Promoting student involvement via small groups, materials which required the students to do something, or games, and then directing the students to look for the mathematics, to discover the patterns,

find the principles has had positive results both for me and for the students. Sometimes the students would come up with results of which I hadn't been previously aware. This happened with the unit on finite differences. I also found that allowing a question to go unanswered for several weeks or a month, but allowing the question to appear several times during that period aroused the curiosity (and frustration) of the students. This happened with the question of generalizing Pascal's triangle which just seemed to keep popping up in set theory and in problems. The result of this was the unexpected event of discovering the binomial theorem when Pascal's triangle popped up in expansions of powers of (a+b). Another case was with the game "guess my rule" which I played several times with the classes. The students became dissatisfied with merely guessing; they wanted a better or surer way to find the rule or equation. This led directly into the unit on Finite differences.

One problem with the materials which emphasized student involvement is that sometimes this resulted in the students being more involved in the activity than the mathematics and not making the transition very well. When this happened it was sometimes the case that the students did not learn very much mathematics. This occurred with "Hanging Over" in which the students were unable (90%) to apply what they had learned or discovered in math class to a similar experiment conducted later in their physics class. This was a problem last year and its solution I feel lies in improving the particular units and not in the method of discovery. The 'Hanging Over"unit needs more material to reinforce the concepts involved.

Another technique which was somewhat extra curricular was to puzzles or games to students, get them started and let them take them home. This yielded mixed and unmeasurable results. The American Can Company puzzles proved intriguing to students and faculty alike. There was a new one up every week.

I also attempted to bring in mathematics in black history, i.e. the work of Benjamin Banneker in the 1790's and appearance of mathematics in 6500 B.C. at Ishango in the Congo. Activities such as graphing the word "Soul" in Looney Graphs and discussing the meaning of soul when doing Logic made for livelier classes.

The teaching techniques which I have described above permitted much individualized instruction and the opportunity to tailor questions and problems to students according to their needs. With one small group or individual I could be dealing with basic skills and then I could move on to pose even more challenging items to more advanced students. These techniques gave the students the feeling that the instructor was aware of them as individuals and

was willing to meet them at their level. The individualization of instruction was especially important to those students who need attention before they will be motivated.

The students learned to think and develop judgement especially because there was much more opportunity for critical dialog. The situations and open questions forced students to think or they got no where. The criteria for success (i.e. making a lamp light with two switches) were often built into the situations so that students were not always dependent upon the instructor for knowing whether they were right or wrong. This is a much more natural environment than the ordinary classroom usually provides.

Again the regular program did not decentralize the classroom; the class remained as a unit for receiving lectures. The computer programming classes were smaller (about 10-12 students) as in the 13-CCP, and they were scheduled separate from the regular classes. The number of office hours available to students was considerably less than in the 13-CCP.

On the other hand, students were much surer of what to expect in the regular program and did not have to undergo the frustration of the discovery method. But frustration can be put to work and be made to yield discoveries.

Most of the students have become oriented to the style of teaching in Quantitative and Analytical Thinking; although I still have several students who think the activities are a waste of time. When they complain, it is often the other students themselves who defined the activity saying "You ought to stay with it. It's fun, isn't it?." And you know it's going to get mathematical!"

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In the regular program potential math majors have been separated into a separate course, but this was not done with the students in the program. Instead a special seminar for the majors was created in which topics preparatory to the calculus such as limits, analytic geometry and trigonometry, were dealt with in more detail. Although the regular course was not designed to prepare students for a rigorous course in calculus, by means of the seminar it was possible to use or adapt certain 13-CCP materials to the content needs of the math majors. It is hoped then that these students will be prepared for the calculus course without having had to give up the benefits of the program.

Roger Ingraham
Quantitative Thinking
Bennett College

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Although it was necessary to use a variety of teaching arrangements in this course, the inductive approach in a decentralized classroom with several units treating the same concept proved to be the most effective one. This situation gave the student an opportunity to select the unit as well as the people they wished to work with. It challenges the teacher to ask the right questions instead of giving the correct answers.

Since there were several games and puzzle units, we were able to use this approach in investigating strategies for them. Students were able to work individually or in small groups on the game or puzzle they selected. This approach was also used to study situations by the inductive method.

Bernis Barnes
Quantitative Thinking
Jackson State College

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Some class hours are set aside for small groups of 5 students where different groups are experimenting with equipment and recording data and drawing conclusions from recorded observations. To understand the concept of binomial distribution is an example of such an activity. Some students may experiment with the hexstat, some with tossing two or three dice, some with the rain drop experiment, and others with the falling tack experiment. Histograms from each experiment are drawn and are compared with each other. Their similarities and differences are discussed. The reasons for similarities and differences are also discussed. Then predictions are made about future occurrences. Applications, such as grades, life expectancy and insurance rates, norms on standarized test, etc. are found by asking students what things they think encompass the idea of binomial distribution.

Students are not always given the same problems to solve. Several different ditto sheets are distributed randomly. Students may get together with other students to compare solutions and discuss reasons for their solutions. Many times they discover that there are 3 or 4 different ways to solve the same problem. They often decide which problems provide the easiest methods for them to employ so they are not forced to memorize one or all methods. They make the decision.

The approaches are not the same as those in the regular college program. It is mainly lecture, response. A few TV classes are under experimentation but one of the difficulties is that the TV lecture is usually ahead of the students. Students may need to

spend more time on understanding the ideas of the lecture but in the meantime a new lecture is presented at the next session. Coverage of certain topics often bring on the stress for both students and teachers when a sequence of topics from a textbook set the pace for the course. The students in our project set the pace for our course. More individual attention is given to help students with specific weakness since there are more hours in the day for conferences.

Carolyn O. Chesson
Quantitative Thinking
Norfolk State College

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Decentralizing the classroom is an excellent way of getting all students involved in various activities, or for allowing students to progress at different rates for the same activity. It worked wonderfully when the class performed various experiments in probability since sufficient materials were available in the probability kits to allow students to perform different experiments according to their particular interests. It saved time as it would have been impractical to have required every student to perform all the experiments. The basic laws of probability were made clearer as the same results were produced in different situations.

Decentralizing the classroom when working on the computer also worked marvelously. To break the monotony and to recapture from time to time the spirit of the program in its philosophy of making students doers, and searchers for answers and strategies, decentralizing by using mathematical gemas and devices creates an excellent environment. (I have serious hang-ups, however, on putting too much emphasis on this approach. Decentralizing merely to keep students busy does not appeal to me. I think that both teacher and students should acknowledge that something meaningful ought to be learned.)

Janie C. Jordan
Quantitative Thinking
Norfolk State College

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If some principles for selection of material from the general outline are decided upon, I believe that the approach which the program has taken in this course is a worthwhile one. However, I did not find that all of the problems which one faces in teaching this course were related to curriculum development. Even with the selection of a curriculum which appears to be fairly relevant and acade-

mically sound, it is still difficult to reach fifty individual students to the degree that this program must if it is to achieve the goals which it has set for itself. I was still not satified with the participation of many of the st dents in the class. Were I again to teach this course I would make more efforts to individualize instruction in an effort to adequately reach a larger number pf students.

William Groves
Social Institutions
Lincoln University

Modernization . . . Political Institutions . . . The Poor: Alienation . . . Minorities and Their status: the Negro

Elmira B. Wicker
Social Institutions
Southern University

A. Modernization

Objectives for this unit are: 1. have students develop or discover some major generalizations about the concept of modernization. An example of the generalizations the students examined are as follows: (a) the phases of modernization-the movement from traditional to modern society include several stages--(1) the challenge of modernity, where leaders advocate change within the traditional society (reasons for this) (2) the formation of modern leadership creates revolutionary changes (3) economic and social living are transformed from subsistence to urban industrialized (4) human interest and identifications are integrated into the national fabric of society (b) the process of modernization disrupts the stability of human relationships and social institutions that mark traditional societies. Human values and attitudes-traditional life styles change (c) modernization requires increased productivity, including investment in mechanical and intellectual capital, and mass consumer markets. Reading dealt with a country in Africa and one in Southeast Asia.

2. Another objective of the unit is to help student develop analytical skills, the kind social scientist use in their pursuit of knowledge. Through his experiences in this unit, student should be able to demonstrate an ability to classify data as indicators of the process of modernization; judge the realiability of data both from source of collection and system of collection.

3. A final objective of the unit is to provide a structure for the interaction of skills and generalizations. Students should develop the means of applying the skills and generalizations beyond the study of this unit.

An attempt was made to draw upon the experiences students already had to develop a concept of modernization, transitional and traditional.

To initiate the unit students were asked to list the most modern thing they had seen over the weekend. Things were listed on the chalk board and classified from most modern to least modern and reasons given for classification-lead student to thinking about the concept of modernization.

The film "North Africa Land And People" which treats a transitional society, was shown. Student indicated the modern and traditional elements in the society--began thinking about the concept traditional and transitional in relation to modernization.

Another activity used: a group of seven students read the Lonely African by Turnbul and dramatized it. Class picked out the salient characteristics of the society (introduction of new ideas, disruption of family relations and establish leadership, change in values and attitudes, change in economic systems resulting from the intrusion of the Europeans etc.

"The Hunters" was shown. After viewing it students were given the following task: (1) what do you suppose would happen if the society of the Hunters suddenly found themselves in Baton Rouge, (2) you are given the task of modernizing the society of the Hunters. Explain fully the steps that you would take, justifying each step.

(In general students took a humanitarian approach, depriving them of nothing they had, forcing nothing on them they didn't want, yet making available to them the necessities and many luxuries of life (established a utopian society). Some took extreme positions from forcibly relocating all of the people to organizing similar to U.S. (schools, churches, laws forcing them to conform etc.). One student stated that though their life was probably the indirect result of white man's rampage in Africa, the Hunters had been blessed not to have been directly enslaved. The best thing one could do for them was to make them aware of the existence of the white man, his capabilities, his evil ways, give them guns, teach them tactics of guerilla warfare so that they can defend the freedom they have. They were quick to see that to gain one thing you must sacrifice or give up something. (the conflicts of society.).)

The reactions to this were fantastic and the class enjoyed it thoroughly, however, the other written assignment was very poor. It was: write a paper on "The Impact of the West on Africa."

An attempt was made to employ an inductive conceptual approach. The unit appeared successful, however, students appeared somewhat dissatisfied at not being given "the correct" answer to all questions that arose. They were willing to knock the question around

a bit but always wanted a "this is the answer" conclusion.

Student interest was exceptionally high in the discussion of the "Hunters" but it was discovered that neither teacher or students knew enough about the society of the Hunters to elaborate intelligently on the questions that arose.

B. Political Institutions

Our concern in this unit was a consideration of political dynamics and the process of decision making and leadership--when, where and how politics is made in the constantly changing political scene in the United States: to help students develop a way of thinking that will give them the knowledge and the techniques necessary to arrive at reasonable answers to questions (from generalizations, make inferences, predict possibilities and explain new phenomena).

An attempt was made to analyze such topics as the nature of the American party system, the role of political parties, party operation, voting behavior, the role of the independent voter, interest groups, public opinion, political campaigning, representative government, and the Bill of Rights. Emphasis was on class discussion, library research and individual involvement. Not much emphasis was placed on factual knowledge for its sake, rather an attempt was made to use facts to achieve understandings. Concentrations was on method of inquiry that may be of assistance in developing understandings.

The portions of the unit that seemed most interesting to the student were: (1) the reading of Dick Gregory's Write Me In (2) the 1968 presidential election. This included the following projects and activities: (a) follow announcements. Make a tape recording of these spot announcements from TV or Radio, bring them to class for analysis (c) collect different newspapers and determine which candidate each seems to favor (d) study the slogan, phrase or that he deliver his promise if elected? Or does it seem to be a device to get him into office--give reasons for your answer. Does TV help inform electorate or does it merely try to sell the candidate to the unsuspecting voter (e) presidential preference surveys of high school students, Southern University faculty and Southern University's students (f) compare election of 1960, 1964, and 1968--candidates issues etc. (3) The study of the Bill of Rights. Here the approach was through a series of actual court cases. Each student assumed the role of lawyer for the defendant. After the defenses were given, they were given the results of the cases as they were handed down by the courts. With the exception of Write Me In and the actual court cases the reading in this unit appeared uninteresting to a large percentage of the class. If I were to teach this

unit again I would approach it through the use of case studies.

Only one writting assignment was given which neted fair results. Defend or refute. Presidential campaigns should be totally supported through federal funds.

C. The Poor -- Alienation

This unit was intended primarily as an introduction to the unit on the Negro American. It had as its objectives: (a) enable students to know that forces in the larger society deem Negroes and other minority groups into a poverty status in disproportionate numbers, (b) students should become sensitive to human needs and problems of poverty in this country, (c) students should be able to generalize and make warranted inferences after examining data. It included an analysis of the characteristics of the poor, the government and the poor, and race and the poor. Our research indicated that over 22% of the poor in this country were Negroes, yet Negroes make up only about 10% of the total population of the country--immediately the question "why" arose. This lead to an investigation of the American Negro for an answer.

Written Assignment:

Defend or refute one of the following:

A. The poor are sexually promiscuous and immoral
B. The poor are lazy

Rational: to enable students to think critically when writing: draw inferences from given materials; to know that certain forces in society deem povery status on some groups

Approach:

unit was initiated with the story of the leoprous people of biblical times (concept alienation) who were the leoprous people, their problems, how did society look upon the -- who are the leoprous people of today? (Questions direct thinking as well as lead to understandings) The unit went over rather well even though some of the students didn't want to read the required reading materials because it was written by a white man whom they concluded could not have known anything about poverty.

Most students were unable to visualize a ghetto and poverty associated with it. Only one student admitted having lived in the ghetto of Chicago. She gave a vivid description of the situation.

Though I am thoroughly familiar with rural poverty I've no first hand knowledge of urban poverty.

D. Minorities and their status--The Negro.

The overall objectives of this topic were to enable students: to know something about the history of the Negro; to make realistic appraisal of social conditions confronting him; to know the real reason why they are poor full of self hate and possess hostility that sometimes explodes in the ghetto streets; know that they are not poor because they possess a certain deficient trait but because they are victims of a racist society.

The unit was introduced with the film "Heritage of the Negro". We then read chapter I of from Ghetto to Plantation and Lost Cities of Africa.

Topics treated include: African heritage, slave trading, middle passage, Negro protest during antebellum period; plantation life; status of free Negro during Antebellum days; Reconstruction; Negro protest since 1860 with emphasis on protest in the 1960's and the Civil Rights movements.

Realizing the gross lack of knowledge relating to the history and problems of the Negro on part of students considerable emphasis was placed on the acquistion of factual information as well as generalizations. The few facts that students possess relating to the Negro were highly distorted.

Examples of statements made by students.

"The white man is not bad--if it weren't for him I wouldn't be in school."

We were just as well off here in slavery as were in Africa:

"The Negro is responsible for his own condition--and don't try to do for himself--drink up his money--have a lot of babies--won't go to school"

The white people are just smarter than Negroes--otherwise Negroes wouldn't have been enslaved: "Negroes didn't try to fight slavery", "Negroes care nothing about each other."

(One must keep in mind that these are black boys and girls born into a society designed and determined that they not know the truth about themselves. An examination of the textbooks that they have used will reveal that the blacks have either omitted or are shown in an inferior position. For example in one high school, U.S. History textbooks, only three Negroes were mentioned, Dred Scott, Tousiant L'Overture and Ralph Bunche. Bunche is shown with two whites and he is referred to as an American diplomat. (No mention is made of his being a Negro.))

Each student read a minimum of five articles and one book relating to the Negro. A majority of the students read over five articles and many purchased and read books that were not assigned.

They were especially interested in books by militant blacks--Carmichael, Cleaver.

Students have indicated that this was the most interesting and appealing unit covered in the course.

General Observations

Freshmen students in the regular program take American History 104 and 105 or Western Civilization 114 and 115 using one basic text. In general the classes are large and there is little opportunity for student participation therefore, little opportunity for developing the art of critical thought which is a major responsibility of social education. In our program an attempt is made to select materials responsive to the exploration of students which will enable them to be self propelling. We try to create a classroom that is a world in which students are free to ask, seek and give order to their experience and create within the students an awareness of his existence and belongingness to all creation. We consider the development of members of society in their thinking capacities one of our major responsibilities. Invigorating and thoughtful search ought to be part and parcel of the classroom experiences.

Student interest and initiative appears much higher this semester than last semester and in this group of freshmen when compared to freshmen that I worked with in the regular program during the '67-68. They challenge each other, and oral presentation they attempt to establish some kind of hypothesis and proceed to prove it. This wasn't true during first part of the session. They tend to bring anything seemingly significant to class. One student took the initiative to invite a friend of his who is a student at L.S.U., speaks Swahili and has a collection of items from Africa to class, another invited a student combo to play African music at one of our evening sessions, one wrote a poem dedicated to Jim Crowism, two did art work, and many brought articles of interest to class or related the contents in class. This was all done on a purely voluntary basis. They no longer demand a correct answer to every question as they did during the first part of the year. I mentioned a lecture on "Black Power in Politics" that was being given on campus but did not ask them to attend it. Surprising about 75% of one of the group attended.

Student preference for exam types made a complete turnabout

this semester. When asked what kind of exam they preferred last semester--a majority expressed a desire for objective exams--true-false or multiple choice. When asked the same question a few weeks ago a majority said essay.

Only the perennial triumvirate of class discussions: sex/race/religion, seems to work with ease.

Paul McBroom
Social Institutions
Southern University

Even though this is my second year in the Project at Southern, I think I misjudged what would get the students "turned on." Last year, some of the lively topics included: hippies, ghetto riots, student disorders, and VietNam. So, I made sure these were raised this year, and added to them: yippies, more campus uprisings (including our own class boycott), the Czech Invasion, Africa, presidential politics, slavery, SDS, and Biafra. But did they have turn-on value? Not quite; though most of them did hold attention and did incite smatterings of curiosity. In the '68 elections, only George Wallace stirred their interest (and that party because one student in each class thought he should win--mostly favoring his hard line on VietNam and Law & Order); not even Joe Dolpit, the first black man since Reconstruction to sit on the City Council, whipped up much enthusiasm.

Only the perennial triumvirate of class discussion: sex/race/religion, seems to work with ease. And seldom is it possible to push beyond opinionated bull session to a more substantial social sciencey intellectual inquiry. When I have tried to steer sex chat around the corners of wise cracks and giggles onto the highway of 'love' (a' la Fromm), the wheels stop, or else down the muddy-rutted road of 'matriarchy', the wheels spin into vituperative denials and defense mechanisms, from which "nobody don't learn nothin' from nobody", so far as I can tell. The next session, no one remembers what was said and the discussion fizzles (this has happened four times now). Or take race; immense curiosity abounds as to my own views of my personal past, but once said, the discussion leads only to a dead end. One the same topic, after Muhammed Ali spoke here a couple of weeks ago, classes began with a burst of enthusiasm about his ideas and race and the 'Nation of Islam' concept, but it was well nigh impossible (unless I had suppressed the conversation) to avoid the "hog pus and maggots" view of religion. But that's about as far as it got. Promises of independent studies of the Black Muslims have yet to materialize; offers of free rides across town to the local Mosque go begging. The item of religion, when used as a discussion baiter, seldom fails. But, like the two above, discussion tends to shed more heat than light, or else, if accompanied by reading assignments, to freeze up and darken

into clouded gloom of academic perfunctoriness and thunderous pretentiousness.

It ought to be said, however, out of fairness to a handful of students, that not everybody in class is as shallow and unready (or obstinate) as the above comments might indicate. But they do reflect my own sensing after the dominant group mood.

How to explain, i.e. understand, the foregoing observations? I confess a feeling of lostness. Perhaps among the comments which follow, being more specific and detailed, some clues are hiding. But first, I'll take a stab at larger, more general explanations, especially of why good discussion starters fizzle. Some kind of answer is crucial for the success of this Project: isn't it a cardinal principle that an inductive approach is preferable to more traditional ones? Wouldn't movement from opinion to deeper analysis of social dynamics, orally in the classroom, be such an approach? What I am calling into question here is not the theory itself, nor its practice in other disciplines, nor its application to genuine lab or field situations -- but I am in regards to these students, in Social Institutions classes, in the classroom, (and to myself, no doubt, as to my ability to deal productively with this methodology).

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There simply is not enough time in a 50-minute hour to be creative, flexible and open to all would-be speakers on a topic (in a group of 25) to shove their comments into deeper questions and issues. It's hard enough to do it in an office consultation with just one student, or sometimes 3 or 4; but it can be done -- and still such dialogues often exceed an hour. More such office visits are called for, yet they are hardly feasible, given their heavy daily schedules, work time for most of them, and rather heavy extracurricular commitments (such as ROTC drill team practice and AUSA club hazing). What needs trying perhaps, is a single class per week running 2 or 3 hours each (say on Saturdays), using my regularly scheduled hours exclusively for individual conferences, intensively relating with each student every week or two. A more drastic thought has crossed my mind: since there are 4 sections of the 100 freshmen and 4 discipline areas, and since a 16 week semester can be divided into 4 segments of 4 weeks each -- why don't we get really intensive? I could take one group of 25 srudents for a month, their time being encumbered only by Phys. Ed./ROTC and Orientation and maybe parttime work. If I could count on using virtually all their hours a day with them, wonders might be worked. Small, voluntary groups within the section could pursue common interests. Field trips and "street corner research" would be made feasible. The vision here is primarily for the first semester; the pattern could simply be recycled in the spring, or combined in different ways to allow interdisciplinary team-teaching -- that great innovation which has not been systemati-

cally tried in this Project yet so far as I know! Perhaps this would enable the big bug-a-boo of getting the TCP style injected into the regular curriculum to be overcome: get a'new' teacher oriented by teaming with a TCP veteran.

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An observation I wish to offer on the why of low genuine 'turn-on' power among my students has to do with games. I've observed Mrs. Posey in Math plant brain-teasers with great success.(while acknowledging certain drawbacks); students who casually visit the office and find numerous number games and puzzles and they love the challenge of them. The problem for me is, while a gamey appraoch seems entirely suited to math and science, it's difficult or phony in the social sciences (I imagine the same is true for humanities, if such an approach were desirable there). I have little taste for the fact-grubbing game -- and so do students. But there is a power of attention to a situation where you don't know the answer, but someone else does. Intrigue sets in and drives one to find out -- and that's a kind of curiosity, a kind of 'turned-onness'. Now, I've come close to triggering that kind of game mentally a few times, for example with the "7 Question" in class approach, wherein we were trying to blitz through Bennett's Before the Mayflower a chapter a day, and I came with 7 fact-interpretation questions to be posed to students called at random, or, another example, when I came down with ditto sheets of Tocqueville's contrast of Northern/Southern traits, but with blanks wherever North or South should be, which students were to fill in -- but each time the 'game' seemed more than a little contrived. Granted, these attempts were pretty well received by the students, yet they obviously did not lead to the kind of student inquiry I was interested in developing. The value of these devises was the other questions they spawned. There is a big difference between a 'guessing game' and a 'learning game'. The nearest I have figured out a system close to the latter is copping out to the old system of the intermediary 'grade game'. Students, having been trained in this exercise for 12 years are quick to demand it; but I am still resistant to it. The trick is to keep it intermediary, merely the system of rewards and punishments, and not allow it to become the game. I haven't quite figured out that part yet, in practice... am open to suggestions.

There is one more sub-suggestion that I am not quite sure about yet. I have repeatedly observed here and elsewhere that visiting instructors can pull off wonders the regular teacher can approach only by going elsewhere himself. Perhaps actual distance is not the crucial matter -- across the hall may be as 'far' away as across the ocean so far as penetrating that insulated, closed world of the class room is concerned. Still...I am not yet convinced that a style of pedogogy sufficient to stimulate on-going enthusiasm is impossible. It may be that one would have to be more unpredictable, uncomfortable

arbitrary, in short authoritarian, in his bearing with his students in order to maintain that indispensable measure of spontaneity and surprise which keeps a class on its risky, expect-the-unexpected toes. Can the 'prophet' be heard in his own land? Or is there herein another good argument for team teaching?

Since Civil and Human Rights were issues in the political campaigns, the students held a mock court in which students played the roles of defense and prosecuting attorney representing students who had their cases in court.

Students were asked to write the name of the girl and boy in their class who they considered most beautiful (considering physical features only) on a slip of paper and place it in a box. Two students tallied the results quickly. (In each class the girl with most Caucasian features was selected.) I asked the class to list the physical characteristics of the typical African. As they listed them, they were placed on the chalk board (by this time many students had begun to sense the object of the game). We then looked at the physical features of the students who had been chosen most beautiful and listed them on the board. Class compared the two. Questions such as these were posed:

Why would a Negroid people select a person with Caucasian features as the most beautiful? Would a group of Caucasians with Negro in their mist probably select the Negro as the most beautiful of the group? What about Chinese? Indians? Germans?, etc.

(I related the results of a socio gram taken in an integrated classroom where each child was asked to list 2 others he or she would like to sit next to. The white chose whites, Puerto Ricans chose Puerto Ricans, no one chose Negroes.) Why?

How does Chinese God look? Japanese? White man's? The Negro's God? What other culture group has a God that does not resemble them? Many students had read all of Black Rage and gave psychological reasons--they concluded that the Negro appears to hate himself--traced much of hate to institution of slavery.

"God-white"; "Angels-white"; "Miss America-white"; "T.V. celebrities all white until recently"; "People in books (advertisment--etc.)-white"; "Good jobs held by whites"; President-white", and on and on--Black is evil--"black cat bad luck", etc.

They gave many specific examples from their hometown and on campus depicting Negroes' attitude toward black-----

This proved to be a thought provoking and invigorating activity.

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Without having mentioned the kind of activity planned previously I simply turned the classroom into a session of Congress with congressmen from North and South. I simply divided the class about equal according to where they were sitting--appointed a Speaker of House and gave them the task of reconstructing the South and taking care of welfare of slaves. The classroom soon became a hot bed quite similar to one of Louisiana's Congressional sessions. There was 100%+ participation but their arguments were superficial--lacked substance and they realized right away that they were real short on ammo. The speaker adjourned Congress to reconvene same time next class period requesting all bills to be placed in the hopper prior to opening session. Students immediately chose sides according to interest. The next class session was full meat. They had done a tremendous amount of research--had well writeen speeches in defense of their bills--gathered facts to support their arguments--presented material in intellectual manner. The Southern representatives acted in the manner of a Southerner. The interest and participation was high and competition keen.

On the third day they were given the same task except they were not to represent any section of the country. They were to assume that they were a group of legislators with the same task that the legislators had in the 1865-1866. The session was lively and a few wild militant ideas were tossed out, but when the session was over--and we analyzed all the suggestions they made there was nothing concrete proposed to ensure first class citizenship for the Negro--the thing they were most determined to do.

Elmira B. Wicker
Social Institutions
Southern University

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Since Civil and Human Rights were issues in the political campaigns, the students held a mock court in which students played the roles of defense and prosecuting attorney representing students who had their cases in court. A Vanderbilt University Law School student was the referee and resource person.

Following classroom projects and reading and discussion, the students went into the community to pass out campaign literature and to talk with community residents; they gave volunteer service in the

Hermitage Hotel, but, before they went into the community a community organizational workshop was held in class, led by a political leader.

This project was followed up by a tour of the city. The project was to make some generalizations about voting behavior of the people who lived in high, middle, and low income areas, businessmen in high income areas and low income areas. Churches were observed, and they were to think and write about how different religious groups might vote.

Since the right of eighteen year olds to vote was an issue, we next moved to a discussion and examination of this question. Students did independent research into the past, and they wrote papers on the pros and cons of the question. A sampling of student opinion on campus regarding this question was taken, charts were made and compared with surveys taken by national magazines, and some generalizations were made about similarities and dissimilarities in the East, West, and South attitudes on this issue.

Another exciting experience for the students and the teacher was a visitation from a senior history major who observed the inductive-discovery method for two class periods. In the first period the teacher demonstrated this method of teaching, and encouraged the senior to participate in the discussion. In the second period, the teacher had the senior student to teach the class, since he will begin his student teaching in the Spring Quarter.

The young senior student teacher was very excited over the TCCP methodology. He hopes to use the method himself, and he reported his experience to his department. The students responded to the young man in a most exciting manner.

Alice Archer
Social Institutions
Tennessee A & I State
University

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With no attempt to integrate was a project the students did entirely on their own. I gave them 95 concepts used in the social sciences and they were to make a scrap book by find jokes, articles, cartoons, stories, situations, etc. to show they understood the concepts. The students say they really "knew" what these concepts meant when they were through, and that rather than the interminable "term paper" they enjoyed it.

Also, we divided up into groups of five and each group took one book and "got the material over to the rest of the class" by skits, poems, debates, reports, etc. They enjoyed conducting their own classes and competed for the most unique way to present their material.

Carolyn Cline
Social Institutions
North Carolina A & T
State University

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The teaching practices employed in the project may be classified as follows: (1) permissive, (2) student centered, (3) discovery, (4) interdisciplinary, (5) concept emphasis, and (6) recognition of differences. Discussion is a major factor in the conduct of the course. The regular program employs (1) lecture, (2) teacher-centered and teacher selected materials (3) does not recognize differences, (4) emphasis is on learning historical facts and (5) textbook and authority oriented.

A student was able to pursue any item or issue of his interest. He could use any mode of inquiry or sources which suited his purpose, interest or were available to him. Some students (two) developed individual projects. (1) To check and compare how selected newspapers did handle crime reporting; (2) How each newspaper handled the reporting of the same incident, crime, speech or event). There were other in-depth investigations, however, all projects or investigations had to be initiated and performed by students concerned. Since there were no specific number set by the teacher for the number of written reports, there was a wide spread difference in the number of reports. The top two students passed in over seventy reports. Two students did not pass in any reports.

Joseph Bennett
Social Institutions
North Carolina A & T
State University

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I divided the class up into five groups of about four students each. Each group was to draw a composite picture of what they thought "Mr. Revolution" looked like. Moreover, they were to give a list of his personality characteristics. Invariably, "Mr. Revolution" was presented as Black and similar to a Black Panther or SNCC militant. They emphasized the noble, educated, eloquent,

and sophisticated features of his character and de-emphasized the demagogic or neurotic ones. This project served as a good introduction to a lecture I gave on revolutionary personalities based on Crane Brinton's Anatomy of Revolution. (Incidentally I had tried this same technique last year but with different results. Then "Mr. Revolution" was pictured as a Latin American guerrilla type with demagogic and neurotic characteristics.)

Classroom discussions have varied in their effectiveness. One discussion, with the director present, covered some elementary points about the military-industrial complex and the "Pax Americana." The students had read and easily understood the background articles that were assigned. They responded readily to questions and they were easily drawn to make more sophisticated conclusions. But another discussion on a similar topic, also with visitors present, fell flat. This discussion concerned the role of social scientists working for the government in counter-insurgency projects in Latin America and Vietnam. Although some background reading had been assigned, few of the students understood the nature of the issues involved, and few students participated in the discussion. One suggested reason for this failure was that this type of discussion was more geared to middle class students in northern colleges who were likely to embark on these types of careers.

During the social science demonstrations at Bishop College, we had examples of two types of discussions. For this discussion students were assigned Martin Luther King's "Letter from a Birmingham Jail." Then at the beginning of the class I played a tape recording of a speech by Malcolm X on the Black Revolution. This lasted fifteen minutes. Then in the ensuing discussion I tried to get the students to compare the revolutionary goals and strategies of the two men. In the first class I let the students take the lead. Almost all the students in the class participated and they debated vigorously among themselves. In the second class I tried to structure the discussion more myself. I wanted the students to draw some sophisticated comparisons and conclusions. But only a few of the better students responded, and I was forced to draw the more important conclusions myself. After this class some of the students protested my approach. They thought I was more interested in demonstrating my own erudition to the visitors than allowing them to have free reign in a discussion in which they were greatly interested. A part of the explanation was that we were involved in a demonstration, and I endeavored to stretch the students to the limits of their capabilities. Ordinarily I would have allowed two class periods to this discussion: one for free discussion and one for more structured conclusions.

Edward F. Rice
Social Institutions
Bishop College

Many students in the social sciences were very apathetic in their reading habits, and often relied on top-of-the head opinions. So long as they could recall few previously learned facts and intersperse them with their own opinions and experiences, they felt they were "safe" and could forego any detailed reading. One section of the class that had a few very aggressive members, and considered themselves sophisticated, were especially good at doing this. Discouraged by these maneuvers and psuedo-sophisticated attitudes, despite the wealth of reading materials at their fingertips, I decided one morning to give a new twist to an old method. The particular unit being studies was The Negro and the American Promise. Various students had volunteered for special topics, and while it was obvious that they had done wide reading outside the program materials, it was also just as obvious that the other students were only "soaking" up their information without doing any reading on their own. Twenty-five questions were made up from the basic reading text "Before the Mayflower." These questions were numbered, cut apart, folded and placed on the desk. Then each student was asked to take a number, then select the question corresponding to his number and discuss it. (Although the questions had been selected from a specific book, similar answers could have been learned from any references on the subject.) The class was a flop, because only a very few students could react at all. As the students filed out of class, one student remarked: "I see now, we gotta do some reading!"

The next day the class listened and reacted to a scheduled panel discussion. The third day the same pick-a-number procedure was used, with one variation: four of the slips contained the statement, "Lead the discussion for guide question 1,2,3, or 4." (Student outlines contained several guide questions for the unit.) This time the enthusiasm of the response, and the information spouted was most gratifying. Even I learned little-known facts from unheard books. The interaction of ideas and responses became so brisk that students forgot to remind me that class time was over. Since then almost all of the students in this class have brought in extra reading material pertaining to each topic under study. One student who received a poor mid-semester grade heads the check-out list in the library. More students also volunteer for more outside assignments. Now, in order to find out the extent of their extra reading and whether the books are as relevant as they are reputed to be, each student is requested to write a short evaluation of the books read, and how each book helped him to understand the topic under study, so that the report might not end with the usual statement "I like the book because it was interesting." One student in the other section remarked that it was the best thing we had ever done.

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Research:

A Political Survey of Negro Attitudes Toward the Presidential Election of 1968 in the Edmonton Heights Subdivision of Huntsville, Alabama

The two instructors of the social sciences used their automobiles to transport students in their classes to the section of the community under study.

(It is my personal opinion that work accomplished by these students can be just as valid and reliable in their realm as are those of greater intellectual and educational superiority, many of whose works have been later invalidated by further research.)

A Study of Conformity to Norms, a traffic study done by students on the campus at three stop signs. All data was totalled, percentages obtained of men and women drivers in specified categories under observations which were plotted on a graph, and conclusions drawn. The students' conclusions were in line with others of similar vein, including Allportz's J-Curve.

Research-in-Progress, Success or Failure, Model Cities Program, study had been completed by student, but on further observation was found to be lacking in certain specific data and explanation deemed necessary for such a study. Student is re-doing project.

Black Capitalism in Selma, Alabama
Contemporary Youth Attitudes on Vietnam
The Role of the Negro Newspaper in Black Power and Americanism
Bus Field Trip: Cultural Tour to Atlanta's Historical places including Dr. King's Memor

Anne R. Phillips
Social Institutions
Alabama A & M College

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1. Student committees collected data, presented campaign speeches and literature on behalf of each of the three presidential candidates. On election day, these Committeemen were listed as electors under the emblems used by the candidates in Alabama. I chose to use electors rather than candidates on the ballots because such ballots are more difficult, demanding more familiarity with the candidate, his party's emblem, etc., in a particular state and the electors pledged to the candidate.

2. Traffic survey--used to denote conformity to and deviancy from on societal expectation--coming to a full stop at a stop sign. The survey also served as a means for introducing and discussing the Allport J-Curve.

3. Discussion of teacher-prepared table showing conformity to easy and difficult norms.

4. Use of "A Chameleon" to illustrate the effect of status on roles. (Role Playing.)

5. Study of role expectations-use of device showing conflict, neutrality and reinforcement of different roles.

Mary S. Brown
Social Institutions
Alabama A & M College

"The Autobiography of Malcolm X" has stirred more out-of-class discussion and further inquiry than any other book to date.

Five major books were dealt with during the year. Ranking them generally in descending order of usefulness in the classroom (connoting also their receptivity by students), with brief evaluative comments, they are:

1. Lerone Bennett, BEFORE THE MAYFLOWER: A HISTORY OF THE NEGRO IN AMERICA, 1619-1964 - by far the most fetching and attention holding book that I have used in two years in the project. Journalistic readibility not as evident when students are pushed to put their own words or interpret what they've read. Vocabulary sometimes exceeds comprehension. Has stimulated numerous independent projects to find out more: e.g. about slave trade, plantation life Haitian Revolution, slave revolts and numerous figures, most popular being Douglass and Washington.

2. AUTOBIOGRAPHY OF MALCOLM X - great flurry of interest at first. Numerous students saw boxes in office at Christmas time; took copies early, circulated them in and out of the project. Have not completed work in class with it yet, but indicators are it was not as easy to read as first imagined. Very, very few of my students have read, or even heard of, this book or MANCHILD or INVISIBLE MAN before coming to college. Has stirred more out-of-class discussion and further inquiry than any other book to date.

3. Peter Berger, INVITATION TO SOCIOLOGY: A HUMANISTIC PERSPECTIVE - not exactly what most students would pick to read just for the fun of it; stumble over Ivy League vocabulary. But concepts are simple and neatly, imaginatively handles. With class structure, especially charting by paragraph, much comes clear; more enlightening "ah-ha's" than with any other book. Students tried teaching it to each other in class, then copped out--got me to do it with lecture and overhead projector. Would use it again any how, but only if time allows say three weeks of carefully guided study--worth the effort.

4. Parsons & Clark (eds.), THE NEGRO AMERICAN - especially St. Clair Drake's article, "Socio-Economic Profile of Negro in America" (re-'victimization'). This article is so meaty and informative it is worth the digging. But would hold it off til late spring, building up to it. Requires significant development of

critical thinking skills. Some articles are less academic than this one: esp., J. H. Franklin "History", K. Clark "Civil Rights Movement", and one on "Business Man"; also worth the digging is selection or relation between Black Americans and "Rise of Africa"; also one by Whitney Young on "Who'se God the Revolution". Most of the other selections are so heavy that they crush spirit of inquiry. Would use again only with more advanced students, guardedly. Great photo essay: good to art-form discuss in class.

5. Otto Kerner (Chm.), RIOT COMMISSION REPORT - about the only section that really appealed to students was #5 on history of Black protest. Rest turned them off: too governmental--meaning dry, without colorful imagry. Would use again only as reference work for voluntary study.

Other printed materials used in class, which had high return value, were: C. E. Lincoln on "Matriarchy" (dittoed from EBONY) - it was used last year with higher yield than this; don't know why.

Frederick Douglass, 4th of July Speech - very stirring, sounded amazingly contemporary; but students had trouble getting what he was really saying, easily trapped by high-flown phrases. Needs group direction, not just independent study for full benefit. (ditto, from JET)

Alexis de Tocqueville, DEMOCRACY IN AMERICA, Vol. I - ditto dealing with contrasts between Northern and Southern personality types of 135 years ago, difference attributed to slavery. Shock value during class discussion in that students' image of Southerner were undetermined. Great introduction into problems of stereotype, prejudice, and myth. Hopefully to be useful in 'demythologizing' Malcolm X's conversions.

By far the most stimulating resources were the non-linear, audio-visual materials--especially movies. The two most exciting discussions grew out of: UNCLE TOM'S CABIN and the NET series piece, OUR COUNTRY, TOO--showing contrasts of golf-cotillion oriented Black bourgeoisie/Yoruba Temple style back-to Africa cultural nationalism/slum life with self-help. Latter excellent for analysis of reference group. Both enticed in-depth plug-in to stance configuration, especially Uncle Tom film, during which they saw him as a 'niggerized' victum until St. Clair was killed, then his eyes and words bespoke a man of 'ecstasy', taking trans-slave role distance--a Free-man, though he died a slave (ironic-comic, not tragic). Napoleon committed suicide via alligators in the Mississippi, a Tragic Hero. Triggered good conversation about tragedy as then recently seen film of OEDIPUS REX, for English Class!

Paul McBroom
Social Institutions
Southern University

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B. A. Botkin, editor, Lay My Burden Down, A Folk History of Slavery. Highly readable because the accounts were written by former slaves, and interesting because they presented the slaves' views on slavery; the students enjoyed reading this book; and I would put more emphasis on it in the future. (Twelve copies of the book were kept on reserve. This book arrived late and was not fully used. Students were encouraged to read selections from throughout the book, but they were only required to read the selection, "Long Remembrance," pp. 61-138.)

Leslie H. Fishel, Jr. and Benjamin Quarles, editors, The Negro American: A Documentary History. The documents varied, but they were all readable and many were very interesting; the main difficulty with this book was that copies were kept on reserve, necessitating that the students take laborious notes; on the other hand this note taking helped them to analyze the documents. (Twenty-five copies were kept on reserve. The students were required to read the introductions to and all the documents contained in Chapters 1, 3-6. Each of these chapters dealt with different aspects of slavery. In a later unit, NEGRO POLITICAL LEADERSHIP, students were required to read the introductions to all the remaining chapters but not the documents.)

Lerone C. Bennett, Before the Mayflower: A History of the Negro in America, 1619-1964. Interesting because written by a black author with a chauvinist taint, and readable because written in a lively journalistic style; it should have been required. (There were no required readings from this book, but students were urged to read those chapters dealing with slavery, particularly the one concerning slave insurrections. For a later unit on NEGRO POLITICAL LEADERSHIP students were urged to read the chapters on "Black Power in Dixie," "The Birth of Jim Crow," and "From Booker T. Washington to Martin Luther King, Jr." Ten copies were kept on reserve.)

C. Eric Lincoln, The Negro Pilgrammage in America. Readable because it was very simple and general; but this book was unfortunate because too many students put too much emphasis on its secondary and scant information rather than consulting the more difficult documents in other books. (Each student was given an individual copy. This book was used for the units on SLAVERY AND NEGRO POLITICAL LEADERSHIP. There were no required readings from this

book, but students made extensive use of it.)

Booker T. Washington, Up From Slavery. Not very interesting because the students disagreed with many of his viewpoints, but very readable. (Twenty-five copies were available and alternated between the classes. The entire books was assigned.)

W. E. Burghardt DuBois, The Souls of Black Folk. Some parts of this were interesting, but most students found this very difficult going because of the author's sophisticated style and vocabulary. (Twenty-five copies were available and alternated between the classes. The entire books was assigned.)

Francis L. Broderick and August Meier, Negro Protest Thought in the Twentieth Century. Similar to Fishel and Quarles but more complicated and difficult. (Twelve copies were kept on reserve. All the documents in Part One and documents 12, 14, 20, 25-26, 28, 30, 34, and 43-48 were assigned.)

Silberman, Charles E., Crisis in Black and White. Effective only with the better students; others found his concepts too sophisticated. (Twelve copies were kept on reserve. Chapters 1-7 were assigned.)

Malcolm X, The Autobiography of Malcolm X, extremely interesting, readable but long. (This book arrived too late to be assigned, but most students read the entire book on their own over Christmas vacation. Each student was given an individual copy.)

Alexander Werth, Russia Under Khrushchev. Difficulty reading because of its obscure references and details, but somewhat interesting because of the first-hand accounts of the Soviet citizens; the students grasped more subtlties than was expected. (Students had individual copies. The entire book was assigned.)

Colin M. Turnbull, The Loney African. Very interesting and readable. (Students had individual copies. The entire book was assigned.)

Robert Perrucci and Marc Pilisuk, editors The Triple Revolution: Social Problems in Depth. Very difficult reading and of little interest because of the many sophisticated and not immediately relevant concepts dealt with such as the military-industrial complex and the Pax Americana. (Ten copies were kept on reserve. Articles assigned were by Fulbright; Pilisuk and Hayden; Flacks, Howe and Lauter; O'Brien; Nicolaus; Horowitz; Caudill; Lewis; Moore; King; and Carmichael.)

Edgar Snow, Red Star Over China. Simple yet difficult because of its great length and obscure details. Students had individual copies. The entire book was assigned, though few students finished reading it.

In general there was too much reading assigned for a freshman course. The poorer and even many of the average students found themselves easily swamped and often lost interest. But generally the reading was effective with the better students. Hence I would suggest that the reading assignments vary according to the student's ability.

The outstanding feature of the reading materials was their almost exclusively primary character. Documents, autobiographies, personal testamonies, and first-hand journalistic accounts made up the substance of the reading material. There were no textbooks and very little of what can be considered as secondary accounts. This is most unusual for a freshman course. . . . There is apparently no reason why freshmen cannot be exposed immediately to primary materials. The only difficulties where when the students encountered obscure details or references as in Werth's Russia Under Khrushchev or Snow's Red Star Over China. Of course the books varied in their interest and readability. A key determinant to how interesting and readable a book was was how closely it was related to the students' own experiences. Thus books dealing with black history or Africa proved to be the most successful.

Edward F. Rice
Social Institutions
Bishop College

After preview some of the movies should not have been shown because of their poor quality

Movies, like pictures, tell thousands of words. They are very important supplements to, but not substitutes for, written material. But in order for them to be effective it is imperative for the teacher to preview them and to prepare for a discussion afterwards. After preview some of the movies should not have been shown because of their poor quality or becuase they did not portray what was expected. Some examples.

Slavery (Indiana University, NET) perhaps the most effective movie because it followed the same sources that the students were reading in Botkin.

Free at Last (Indiana University, NET): effective because it dramatized the lives of men we were reading about: Washington, DuBois and Garvey.

Frederick Douglass (CBS "Profiles in Courage" series): effective because it was a good quality production by CBS; however we did not read any material associated with Douglass.

The Negro and the South (Indiana University, NET): effective for stimulating discussion because it was close to the students' own experiences; most students, however, dislike its presentation of Negro life with its emphasis on poverty and ignorance.

New Mood (Indiana University, NET): uninteresting because much of it was old-hat.

The Negro and the American Promise (Indiana University, NET): this is a most valuable television tape because Dr. Clark interviews M. L. King, Malcolm X and James Baldwin.

Our Country, Too (Indiana University, NET): relevant to the students' experiences but also boring.

The Future and the Negro (Indiana University, NET): very boring because it was a panel discussion.

Omowale (Indiana University, NET): students were only mildly interested in this Negro's return to Africa.

The Revolution in Europe's Role in the World ("20th Century Revolutions" series): ineffective because it did not portray the expected points.

The Fascist Revolution ("20th Century Revolutions" series): ineffective because we had no corresponding reading material.

The Russian Communist Revolution ("20th Century Revolutions" series): ineffective because it did not portray the expected points.

The Revolution in the Colonial World ("20th Century Revolution" series): this was surprisingly effective although it was a dramatized United Nations debate over the Algerian question; and, except for the few students who read Fanon, we had done no reading about Algeria; but with a little introduction from the teacher, most of the students found themselves very much wrapped up in the debate; this was probably due to the students' almost instinctive sympathy for the colonial world as was also exhibited in the reading of the Turnbull book; the study of the SLAVERY unit probably also helped.

The Weapons Revolution ("20th Century Revolutions" series) and,

Japan's Revolution ("20th Century Revolutions" series) and,

The Revolution in Human Expectations ("20th Century Revolutions" series): ineffective because we had no corresponding reading material.

and The Great War

Aftermath of World War I (University of Southern California): ineffective because they did not portray the expected points.

Inside Red China (Brandon Films): effective because we were doing some corresponding reading.

The Heritage of Slavery (CBS documentary) and

Negro History, Lost and Found: very effective because of their excellent quality, superior to the NET productions, also because we had done corresponding reading.

The main difficulty with using movies is that they are very difficult to schedule for the most appropriate moments. Thus they are often shown out of context or out of order. Quality rather than quantity is the keynote in selecting movies. Boring movies are better off not being used.

Edward F. Rice
Social Institutions
Bishop College

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Introduced new this year was an attempt to intergrate or provide a rational for studying social science by looking at the various human events that are common to all people of all times and cultures. We used the Indiana University films (see question 3) of twelve films "People are Taught to Be Different" starting with Birth, going through Childhood Rearing Practices, Puberty, Marriage and Courtship, and so on to Death and the Supernatural. In each case the American Way is contrasted with two other societies or cultures, usually pre-industrial. The idea is great, the working out is not. First the films are narrated and the "actors" dance through the narration. This got dull, but we continued because of the enormous amount of information capsuled in thirty minute units and used the remaining time for general discussion. Usually the teachers had to "discuss", and not nearly as many questions came from the students as were anticipated. I would not recommend the films but the central idea is worth re-working.

Carolyn Cline
Social Institutions
North Carolina A & T
State University

[In biology,] the most important thing for the student to know is, ironically, the thing which interests him most - himself!

. . . The objective "learn something important" presents peculiar problems in biology. It is extremely difficult to determine just what is important. What factual material should a student know after having taken a one semester course in biology? It is my personal feeling, shared by several other teachers in the Program, that the most important thing for the student to know is, ironically, the thing which interests him most - himself! Most biology courses pay at least lip service to this by constantly referring back to the human organism for comparison when discussing the structures of other creatures.

Just what is it which I feel a student should know about himself as a biological animal? Where he comes from; what he's made of; how he works; and where he's going.

An analysis of these objectives shows that many traditional areas of biology are included, but here the emphasis is always on the student himself. This is made immediately clear to the student from the first unit covered (The Human Organism). He has a chance to see how his body, as a series of organ systems, works, and how what he does affects its functioning. His interest is captured.

But the question remains, why do these organ systems work? Enter the cell. The unit on cellular physiology was easily the weakest of all. Certainly, if I were to keep to the idea of only interesting the students, I would have omitted it. In a way, my inclusion of it was due to my own bias, for I feel very strongly that any biology student should, at least, glimpse the more complex bio-chemical side of biology. How to do this painlessly, without encouraging despair, I have yet to discover. I think the answer may lie in more relevant laboratory activities on the subject.

Once some idea of how the cell works is gained, however, the students native interest may once again be tapped for the units on reproduction, genetics, and evolution.

The biological topics are discussed in personal terms. We discussed perceiving as well as the chemistry of vision; listening as well as the mechanism of hearing. We discussed the problem of genetic personality deviations and the implications of genetic control.

Problems extending outside the immediate realm of biology are also raised. The classroom may turn into the arena for a hot debate on the morality of drug use, or to the story of Genesis.

Part of the process of self awareness stems, I feel, from acknowledgement of one's self as a biological animal, and this approach, with its emphasis on student participation in discussion, helps the student come to such awareness.

Ruth Chervin
Biology
Norfolk State College

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When we came to contraception I told the class that anyone who did not want to hear about it could excuse themselves with no penalty. And I asked no questions about in on examinations. I wanted no one to complain that I had a captive audience and forced them to learn about it. However, everyone chose to attend.

Two students reported on their findings concerning contraception and the biological mechanism of birth control pills in "The Control of Fertility" by Gregory Pincus. The instructor also distributed Xerox copies of "Sex chromatin and phenotype in man" by Murray L. Barr and we discussed this scientific paper in the class. Several biological principles not normally covered in class were discussed with a great deal of enthusiasm including:

a. normal gonadol differentiation
b. sexual dimorphism
c. tests of chromosomal sex in clinical medicine
d. congenital errors of sex development in man
e. Testicular feminization
f. Klinefelter's syndrone

Louis Stallworth
Biology
Florida A & M University

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In our State of Georgia a political maneuver is underway to make it legal to lease vast areas of the State's eastern estuaries to a mineral company to excavate the rich deposits of phosphate. If this were made legal by our legislators -- by way of us -- the State would no doubt receive a tremendous amount of revenue from the corporation involved. This would be an immediate solution to

find new sources of revenue for our State's growth and development. However, how many people are aware of the long-term effects of such an operation? Are they aware of the imbalance of nature that these mining operations would inflict? Are people aware that the estuaries will become polluted and that the now fecund and highly productive crustacean and shellfish beds will be irreparably damaged or even totally destroyed? This not only would eliminate a great natural resource but would eliminate -- in the long run -- an even more valuable source of revenue -- tax from the Georgia fishing industry. Scientists can only call our attention to bad legislation. It is up to us to become informed on such matters.

Another burden that will increasingly be the responsibility of citizens in the future will be in deciding what is ethical. The world crises that exist today and will become even more acute in the immediate years ahead will force us to re-evaluate our ethical and moral positions. Perhaps a universal ethics in the future can be based upon an appeal to the trust as established by science. Science tells us that we are experiencing a population explosion and that unless massive birth-control efforts are enacted the population of the earth will double in approximately thirty years resulting in catastrophic famine. Is contraception moral? Who must decide this? Genetics has made it possible to identify lethal and deleterious genetic abnormalities in human beings. Is it ethical to practice eugenics? Who must decide this? Economists inform us that the United States has a gross national product of nearly 200 billion dollars anually and yet one-forth of our population is suffering from malnutrition and insufficient medical care. Is it ethical to allow such an inequity of wealth and opportunity to exist in the most affluent and technologically advanced country in the world? Who must bear the burden of this decision?

These problems and many more like them are going to have to be confronted and resolved by us. The world has become too complex and too inextricably entangled in technology for the solution of these problems to result from non-scientific bases. What is ethical or moral can no longer remain philosophical or academic issue that is the responsibility of the few--namely theologians and philosophers. Everyone is directly confronted with these issues today and, thustly, it is the responsibility of everyone to come to grips with them. Science can provide us with what is true; and it is only by knowing what is true that we can best reassess our values from which our social goals can then be best formulated.

In an effort to meet this responsibility, several excursions will be taken from the strict subject-matter units to examine a few of the relevant scientific issues confronting mankind today.

The choice of topics and the particular time during the semester that they are ventured is immaterial. There is literally an inexhaustible choice of relevant issues that can be fitted into the curriculum at any place. I have chosen two issues that I feel are especially intriguing and provocative: (1) Silent Spring by Rachel Carson and (2) two articles from The Atlantic Monthly.

The two articles from The Atlantic Monthly, "On Living in a Biological Revolution" by Donald Fleming (Feb., 1969) and "Further Thoughts on the Scientific Revolution" (March, 1969), will be dealt with prior to the unit on genetics.[1] A significant part of Fleming's comtemplative summary of recent scientific discoveries and a projection of their significance in the immediate years ahead is based, to a large extent, on genetic support. It is hoped that these two articles will (1) stir up tremendous furore in our studdents and make the materials in the unit on genetics more relevant, interesting and exciting and (2) be instrumental in helping to instill an awareness in our students of the impact that science has on every aspect of life, i.e., to help bring about this quality called scientific literacy.

Silent Spring will be dealt with prior to the unit on ecology.

Martin Carey
Biology
Clark College

If I had been lecturing I never would have learned how the students think and how apparently "out of the clear blue" they arrive at some of the established theories.

Elizabeth Clark
Biology
North Carolina A & T State University

We had discussed the atom, Miller's and Fox's experiments demonstrating the possible origin of organic compounds from the primitive atmosphere, and finally the origin of a cell that acquired energy and nutrients from the external and possible some essential chemical factors, the cells which survived through adaptation, developed organells which could produce energy and carry on additional chemical functions. From here on we were concerned with the physical and chemical nature of organelles that enabled the cell to carry on the essential functions of life. Later we planned to interpret the importance of the systems based on the understanding of the cells.

Ithout assigning a specific chapter, or pages, I asked the students to prepare to discuss the cell. I suggested that they read Helena Curtis' book on the cell because I liked her approach. They could read the BSCS or any other reference of recent publication.

The next discussion period I asked who would like to start the discussion on the cell. One student said, "Mrs. Clark why not ask us some questions". The other students looked amazed and said that the cell study covered a half of the book. Then I said that if they had read the assignment, either they would have a lot of questions or they knew everything. There were no volunteers. I told them to forget me and ask themselves who, what, where, when and why. They named the cell wall and the protoplast which was made of the nucleus and the cytoplasm. Then the questions, interest and discussion centered about the nucleus and chromosomes. They had discussed DNA, DNA replication, the synthesis of RNA and proteins during the discussion of organic compounds. When they understood that the chromosomes were composed of DNA they readily understood why the chromosomes contro led the chemistry of inheritance.

One student asked why the DNA did not duplicate itself to the

point that the nucleus exploded. Another student (B) answered that maybe RNA is being synthesized faster than DNA can duplicate itself since RNA moves out of the nucleus. Student (A) then asked why DNA did not leave the nucleus? I mentioned the fact that in recent studies DNA was found outside of the nucleus. Student (C) reasoned that the chromosomes envelope and centrioles favored the concentration and duplication of DNA more than any where else in the cell. Student (E) said that maybe the molecule is too large to leave the membrane; another student said that maybe as soon as DNA reached a certain concentration this initiated a mechanism for cell division. (We had mentioned coacervates in the formation of the cell.)

One student asked, "If a sperm cell has more DNA than an egg, will the characteristics of the offspring look more like the fater?" A young lady answered, "It is not the amount of fat that wins a fight, it is the type." This brought on a discussion of dominance and recessive traits which they agreed to discuss at a later date.

At this time a very quiet student said that she had read something about chloroplasts, mitochondria and plastids containing DNA. Then she said "We know that DNA duplicates itself, maybe in the future, different and competing organisms can arise inside of cells from one organelles." I told her that there is a theory of the possible origin of the virus that is slightly similar to her idea.

The question came up concerning whether or not the virus had nucleus, plastids, mitochondria of its own. Some TV announcer had made a statement about the Hong Kong Flu cell. Another student answered that the virus was a particle and had no energy of its' own. She had seen this in the Scientific America. A young man then said, "The doctor told me that the virus had reproduced and taken over his brothers whole body. Reproduction is the characteristic of a living cell." This brought on a discussion of the virus, the bacteriophage and the difference between the molecular and physical make up of the virus. We voted to table detail discussions until we finished the cell.

The students had talked the whole period on two or three occasions. They were thinking and were searching for their own explanations. They had exchanged ideas and had learned something important in the subject area. In this manner we finally discussed the whole cell and on checking through Helena Curtis, there were few cell parts, chemistry and function that we had not discussed.

In the final analysis they had discussed all of the different types of cells, the molecular structure of membranes, the chemistry

of the formation of proteins, lipids, hormones, cholesterols; the molecular structure of muscular fibrils, the permeability of unit memberanes and so on. If they understood the cells, I knew that the discussion of the scientific papers would generate a lot of interest when the student tried to interpret many reactions on the cellular level.

The discussions sounded more like a social chat than a college lesson on the cell.

If I had been lecturing I never would have learned how the students think and how apparently "out of the clear blue" they arrive at some of the established theories. I would have thought that going off on such tangents, we would have never been able to have a basic understanding of the cell.

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Most students considered The Development of the Chick Embryo as the most interesting so far. To understand this unit we had to study Mitosis, Meiosis, Oogenesis, Spermatogenesis and Cell Differentiation. In our study we found that mitosis and meiosis were concerned only with nuclear division and the process in which cytoplasm divides is called cytokinesis. The two processes often occur together, or cytokinesis follows mitosis giving rise to two new cells. But, in some cells, for example, the flower ovule, one nucleus goes through meiosis and gives rise to two nuclei. The same two nuclei go through two more mitotic divisions to give rise to eight nuclei in the same cell. Meiosis and mitosis occurred without cell division.

I came to the classroom door one day and heard the students in the following heated discussion:

"Isn't mitosis cell division?"

"Yea, man."

"Mrs. Clark said that it isn't."

"I know, I think she made a mistake. In the film it was called cell division. Every time mitosis or meiosis occurred, the cell divided into two cells."

"A lot of us didn't accept that statement."

I was pleased and I was hoping that someone would say, "Let's look it up," but they did not. All that they had to do was read. I

cannot get them to check authorities before involving themselves in an argument. They do not like to look up information. They would rather ask me and then spend a lot of time deciding whether or not to accept my answer. I am happy that they feel free to disagree but I think that this should motivate them to read more.

I entered the room and said, "Today we will study reproduction in plants. Before doing so, let us review spermatogenesis and oogenesis." Finally I asked, "What is mitosis?" Six persons said, "Cell division." Then I asked if any one had a different opinion and several other students said together cell division. Then I said, "Well we will check this later." One of the students then said, "Let's clear it today, Mrs. Clark. All of my life I have heard that mitosis was cell division, and now you say it is not." "Yes darling, we will do it today, but we will do it with flowers. I have some beautiful snap dragons and they may die before Thursday--OK?"

There was some undertone noise but it became quiet as I continued. We discussed angiosperms and gymnosperms, Monocots, dicots, polycotyledons; cones, solitary flowers and floral clusters. The snapdragon is an agiosperm floral cluster. We discussed the symmetry of the flower; the shape, color, surface, number and function of each organ and removed one type at a time to see the relationship. We studied pollen in and out of anthers, we made cross sections of the pistil in the ovary section. When we studied the maturing ovule they found that the nucleus divides to give the dinuleate stage. The two nuclei gives birth to two more mitotic dividions resulting in eight nuclei in one cell. These eight nuclei play specific different roles in forming the seed. Someone then recalled that some white blood cells has several nuclei.

One student said, "Mrs. Clark, you are showing me that meiosis and mitosis are not cell division." Another student said, "I see now, it is only a part of cell division if both the nucleus and the cytoplasm divide in the same cell. Otherwise, a hundred nuclei might be formed in one cell by meiosis or mitosis unless cytokinesis occurs. This satisfied the class. They said that this cleared up many questions.

Many interesting questions were asked:

Do insects see color--this led to consideration of reflected light.

How does fertilization occur in corn since corn does not have the typical flower--this led to consideration of grass type flowers.

Why do you say that sun flowers are not radially summetrical--this introduced the composite or head floral cluster.

Is the Christmas flower, poinsettia, symetrical? This introduced a discussion on beautifully colored bracts of the poinsettia and dog wood.

Do bananas have seeds, and how do plants propagate that have fruits but no seeds? Is the milk of the cocoanut the seed?

They liked the experiment and asked to continue it. The following Thursday we studied the germinating seed and seedlings. This time the students had good questions and answers. They said that they understood the material more than before.

This quarter my students are more concerned with "do we have to do this," and "will it be on a test?" I would prefer that they ask, "What does this mean and how will this affect something else?" Apparently, only six out of fifty students understand their reading very well, or they cannot read. We have not been having reading sessions because we were working extra time on projects. We will begin reading Monday, 3/24/69. I introduce one or two simple problems with each unit but only a few help solve them. I had two simple problems on the exam. Only two students tried to work them.

On his own initiative the student found a bulb and covered it with strips of red celophane tape. He then gathered up a witness and a piece of red paper and went into the darkroom.

The first class of the second semester I handed out to my new students the first Scientific American Reprint -- "The Effects of Cigarette Smoking." One student immediately asked, "Hey, what is this?" "I thought this was a biology course!!!!? This is typical of the initial reaction that first day. Then I asked them what they thought about smoking. Since these students had been exposed to one semester of the ISE approach, they were eager to enter into the discussion. It would be difficult here to relate the pathways which the conversation followed that day, in fact, it differed greatly from one class to the next, but examples of the issues which the students, themselves, raised are:

1. Is it the drug (nicotine) or the smoke that's harmful?
2. What about other drugs? (This led to such a prolonged discussion that I later assigned groups to look up various drugs and report on them to the class.)
3. What about cigarettes and heart attacks?
4. Are heart attacks inherited? (This brought out some questions on genetics in general.)
5. What about the sex of the smoker in relation to smoking?

I remember leaving the classroom after four hours (two classes) of this and all I could say was, "My God, they've raised almost every question which the course is designed to answer!!"

The next class combined an experiment with a more concrete discussion of the article. The point here is that an enthusiasm was engendered that first day and an opennes to inquiry which was to last through the semester.

One example of the spontaneous investigation which I think ISE can take credit for occurred in a class in which we were discussing light waves in relation to photosynthesis. I had asked why one student's blue shirt appeared blue. Remembering their physics, they

replied, correctly, that all of the other colors of the spectrum were being absorbed, and blue was reflected. One of the students then asked why a red shirt appears "washed out" or colorless in red light. What followed surprised the students involved as much as it did the rest of the class.

One student reasoned that if the only light eminating from the bulb is red, then the red light should be reflected in toto from the shirt. This led another student to question whether red really does disappear in red light, since he had never seen it.

I then suggested we try it and got a red filter, high intensity light source and a book with a red cover. The second student held the filter between the light and the book, but the cover still appeared red. The first student, however, was unwilling to let the matter drop. He held the filter to his eye and looked at the book to see the color pale considerably.

Since I had no explanation and no more hypotheses were made to explain the phenomenon, the matter was dropped. Before the next class, I asked members of the physics department about it, and they said that the object should appear red, but it must be of the same color as that coming from the source. I did not tell this to the class at the next period, simply because it had, by then, slipped my mind. The first student of the last class discussion, however, was still puzzled. He decided that one of the problems was having to use a light source and a filter separate from each other. On his own initiative he found a bulb and covered it with strips of red celophane tape. He then gathered up a witness and a piece of red paper and went into the darkroom. He emerged triumphantly to state to the class that the red was indeed washed out by the red light. We now talked about what I had learned about the need for the same wavelength in both the transmitted and reflected light.

This was rather a small incident, no earth-shattering conclusions were drawn. But there is something here of merit. The students were questioning phenomena theory which would have previously been taken for granted, and what's more, they pursued the answers and these questions were of their own observations.

The last incident which I shall describe happened so quickly that had I not been listening at the time, I would have missed it. We were discussing the light and dark reactions of photosynthesis. I had talked about one being a photochemical and another an enzyme activated, temperature sensitive reaction. One of the students commented, almost to himself, "Hey, that's like a camera!" Another student asked what he meant and the first student explained, "in a Polaroid camera, the exposing of the film is sensitive only to light

and independent of temperature. But how fast the film is developed, is temperature sensitive, since it is a chemical reaction."

I feel that this conversation, coming as it did, unsolicited at the end of the class period is at least one small indication that we are accomplishing our objectives.

Ruth Chervin
Biology
Norfolk State College

Materials for laboratory activities correlating with the lecture-discussion for this subunit was taken from a laboratory workbook, titled, "Problem Solving in Biology," by Eugene H. Kaplan. These activities seem to be unique in its approach in comparison with ones I had used previously on this particular subunit. It appeared unique in that it begins with a problem. The Problem I: Each student was given a closed plastic box with objects placed in each and sealed. I made a small modification as to the type of box to be used, the workbook required a cardboard box instead of a plastic box. I used plastic slide boxes in order to eliminate as much sensitivity as possible. The task was for the students to determine what was in the boxes without opening them. Next, I passed a sheet of paper to each student, then I proceeded by telling the student that they could do anything they felt necessary in questing for the answer, anything short of opening or damaging the box. In establishing a dialogue, I continued by asking "are you at any greater disadvantage than a nuclear physicist who is unable to see into the"box", (atoms) in which are the particles that must be liberated in order to cause an atomic reaction? I continued by saying "solve the problem, remembering to write down what you are doing and thinking before you read any further. After a few minutes had passed, one or two students mentioned something about a control, which we had briefly discussed the preciding day. I thought quickly, while they were still making observations, I stepped into the storage room and found a sufficient number of empty plastic boxes, here I made another modification of the original procedures as printed in the workbook. Also while in the storage room I gathered up sample objects, such as (paper clips, boiling marbles, very small wooden sticks). I then passed out an empty box to each student and placed the sample objects on the laboratory display table, enabling each student to have access to them. Each student observed the sound of the objects in the seale box and then placed sample objects in the unsealed boxes and observed the sound and made a comparison. After the students had sufficiently observed and formulated hypotheses, they were allowed to unseal and open their boxes. To many of them "what a surprise" for making an incorrect guess.

Willie M. Clark
Biology
Bishop College

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One of the more effective papers was the McCutcheon paper, "Hemoglobin Function During the Life History of the Bullfrog". The paper was not easier to read nor any less quantitative than some of the others but it led the class to discussions that proved fascinating. Students were challenged to think critically about the relationship of types of hemoglobin to requirements for metabolic processes and then to relate this with availability of necessary factors in the environment of metamorphosing amphibians. This required their consideration of blood properties and circulation in these animals and led them to a curiosity about their own blood. Since human blood was not the topic of the research paper used, the students eagerly sought references which would enable them to learn more about their own blood. Widespread interest developed from attempts to analyze and clarify the truths of superstitions and common sayings students had heard about blood, reasons for blood tests they had taken, the meaning of sensations they could detect from their heart beat or pulse rate. Little or no prompting was necessary to promote learning on this topic. Laboratory experiences included: Study of frog blood. Dissection of frog heart and certain blood vessels. Study of effects of chemicals on frog heart rate. Human heart rate variations. Study of properties of human blood. Blood typing.

The most surprising activity was the Rana pipiens metamorphosis study carried out by eight students during the second semester. The students themselves proposed and carried out the experimentation which proved to be a stimulating group project. Periodic class reports were given on the project by these students so that the whole class became interested in and profited from the experience. At its completion, the group agreed that the project should be written up. When several students submitted a draft in the form of the scientific papers they had been reading, some students objected and volunteered to write a report of more human interest. They said this formal type of report would not get anyone interested in science; that it would make them feel that science is dull and regimented. They then wrote a seperate report which they felt would stimulate interest. The article was submitted to the school newspaper. Here is the way it began:

DATES WITH RANA

> Talladega College is not as boring as some people put it. It is really swinging. It's your thing to do what you want to do if you really know how. Around the twenty-sixth of February a group of eight students volunteered to find out what would really happen if larval frogs were fed thyroxin. There were four young ladies and four young men and we met in the basement of Silsby to get a real thing together. That was when we were introduced to R.P. We decided to split up into two groups so we could do a little

comparing. Larry, Wyvonnia, Ray and George were called the experimentals. Mary, Diane, William and Deanna were the controls.....

In this style the report went on to relate the procedure used, results, a discussion and conclusion, and ended with -- "This was our Thing!" This I viewed as a part of the students search for identity. They had gained a new respect for science and hoped to instill this attitude in other students in their peculiar creative way.

Muriel Taylor
Biology
Talladega College

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The following questions were placed on the chalk board: "Is it possible for a female to give birth to quadruplets, a set of boys, fraternal twins; a set of girls, identical twins; the boys, having one father, the girls another? Explain." Many students answered before giving any thought to the question. Others asked questions about the question. Some of the students reactions were: "That can't happen, what are identical and fraternal twins? Do you mean that all of these babies will be born at the same time? Is the lady a prostitute?" One thoughtful student said that we have been, basically, discussing the normal things that happen. This appears to be way out to me. After this went on for about thirty minutes, the instructor said that many of you have made statements or asked questions that must be considered or answered before we can attempt to answer our original question. First, we need to understand the question. If you notice here the question was "Is it possible"? We are not concerned about who would do something like this. If you were contemplating the latter, it might be a matter of you not wanting to accept such an idea. The instructor went on to say, by the nature of your questions, there are terms within the question of which you do not know the meaning. So I suggest that we become familiar with the following before attempting to answer the question:

1. Identical twins
2. Fraternal twins
3. Quadruplets
4. Life time of egg and sperms
5. Coitus
6. Path of sperms and egg

The instructor gave the students a paper, taken from "Sexology" magazine entitled "What Teenagers Should Know About Reproduction." The students were told they could find information contained within this paper that would answer many of their questions. They were also given information about reference material to support the paper.

This ended the class period.

The next class period was spent discussing the paper. We did not attempt to answer our original question. Students were told they were to keep the question mentally before them and that we were now in the process of collecting data so that we would be able to answer the question later.

I think this classroom activity worked well with students. First of all they learned some basic facts about reproduction. They were constantly asking or answering questions about the topic. Judging by the many books and magazines that students brought to class, many were doing outside reading that was not required. After a week of class activity on reproduction, students were asking the type of questions that they would not have asked earlier.

Why did it work? I am not sure.

The students are interested in reproduction. The instructor tried to approach the topic of reproduction with the same attitude that he would approach digestion. The instructor has a way of reducing "student-teacher tension" felt by many of our students.

Jimmie L. Cal
Biology
Alabama A & M College

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Film loops of frog development in time-lapse photography and being able to stop various frames for detailed observations . . . provoked much more student participation than methods used in the regular biology program.

Audio-visual materials also enable students to follow closely or repeatedly a phenomen or experiment which they themselves have already experienced or attempted. I have also discovered that after viewing a filmstrip or film loop which dilates or telescopes time, or which examines in great detail what they saw hurriedly, students' understanding and thus enjoyment and appreciation for the particular phenomena is greatly escalated. The latter may be illustrated especially well with the film loops used in the 13-College Biology Program. For example, in discussing embryonic development students observe chick development using incubated eggs, however, actually seeing development proceed in a sequential manner is almost impossible in our laboratory. Film loops of frog development in time-lapse photography and being able to stop various frames for detail observations . . . proved very enlightening and provoked much more student participation than methods used in the regular biology program. In fact, we had an entire invertebrate zoology class and instructor from the regular program to visit our program to view more invertebrates on our film loop projectors. One of our 13-College Program students now enrolled in the invertebrate class suggest this activity after discovering that there were not enough microscopes for each student in the class to observe their live specimen.

Much of the audio-visual aid material in use is so constructed that students often return to their work to review their experiences after class with little or no supervision on the part of the instructor. Also during class, small groups close to the screen, often view the loops and strips in a lighted room without disturbing the rest of the class who are engaged in other activities.

Louis Stallworth
Biology
Florida A & M University

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The effectiveness of the film loops can easily be demonstrated. First, when describing dynamic processes, any written materials, even the most interesting, are static. The students do not get the feeling of movement, but rather of a series of steps, disjointed, and stationary. A fine example is mitosis.

After a discussion of the article on cell division, the students saw an excellent film loop on mitosis. Suddenly the whole thing made sense. It is not prophase, metaphase, anaphase, telophase - but the movement of chromosomes in the cell operated by intricate machinery to insure the same genetic heritage in each daughter cell.

Another advantage to the loops is that the students can go and use them at any time, an advantage not shared with more ponderous visual equipment. The students, for instance, repeatedly went back to the film loops on the fetal pig, when the descriptions in their manuals were too technical.

All of the loops which I ordered for the Program, as well as the projectors, have been made available to the department. They are now being used by virtually every other biology teacher here, which is a comment on their usefulness.

Ruth Chervin
Biology
Norfolk State College

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Many very good A-V materials have been included in the unit outline. I used several of these films and some of the film loops to great advantage throughout the unit and recommend the use of these unit A-V materials to other instructors. It has been my experience that most students find films extremely interesting and especially valuable as a means of supplementing and reviewing what they have learned in class. Film loops, especially those demonstrating various laboratory techniques (bacteriological techniques, histological techniques, et cetera are of great assistance in the laboratory. An assortment of film loops and one or two film loop projectors should be standard equipment in every introductory biology laboratory. I have used the following films from the BSCS Biological Techniques Series:

#04: "Handling Drosophila."

#05-1: "Bacteriological Techniques" (cotton plugs; flaming; transferring cultures).

#05-2: "Bacteriological Techniques" (plating; spotting; streaking; preparing wet mounts; micro-culture).

#27-1: "Paper Chromotography" (basic principles).

#27-3. "Paper Chromotography (separation of amino acids).

#28: "Histological Techniques."

#29-1: "Smear and Squash Techniques" (onion root tip).

#29-2: "Smear and Squash Techniques" (Tradescantia buds).

#30-1: "Neurospora Techniques (culturing and handling).

#30-2: "Neurospora Techniques" (crossing of albino with arginine-deficient with normal).

Martin Carey
Biology
Clark College

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Film Loops are very good teaching devices. They are short and cover, usually, one concept or skill. The one on Matrix multiplication was one of our best. The film loop machine was placed in the curriculum library.

Students could go in and view the loop over and over until the mastered the skill of multiplying matrices. The machine can be stopped at any interval which is an advantage over the film projector, ie, the particular model which we have at A. and T. This machine lends itself very well to individual and small group instruction.

Reuben C. Drake
Quantitative Thinking
North Carolina A & T
State University

/In the PSNS textbook/ the order in which the subject matter is presented is excellent. . . .

/but/ the big basic hypotheses concerning the nature of solid matter do not emerge naturally from the experimental results

In order to acquaint the reader with the context within which this report is written, I list below some of the ways in which the Natural Science Course at Mary Holmes differs from the other science courses in the program.

1. Because I am a Chemist and there are no other scientists in the TCCP here, both semesters were devoted to physical science.

2. Many of the areas treated in passing in the text were expanded considerably with additonal experiments and reading materials.

3. Because of overcrowding in the lab and because I do not believe that a single instructor can really interact effectively with a class of 25, the students in the program were divided into 3 groups of 16-17 students each for their science classes during the second semester.

I believe that the textbook and the laboratory approach deserve comment.

I. The Textbook

An Approach to Physical Science has made one great contribution to our course: the order in which the subject matter is presented is excellent. The all-important element of progression is present: progression from the concrete to the abstract; progression from short experiments to longer ones. The book's language does not intimidate the student. The work of the course is brought together into a (hopefully) coherent whole.

In other respects, however, the book is not so satisfactory. Very seldom have I felt understanding blossom in a student's mind as a result of reading it. Many topics are treated far too briefly. Concepts are sometimes introduced without explanation, and arguments are often

not followed through. Some topics, such as the analysis of the double-slit experiment, are treated in detail, but the presentation is extremely confusing. It is therefore clear that, at the very least, the book must be supplemented extensively with outside reading and classroom explanation.

II. The Laboratory

The early part of the fall semester was devoted to extended discussions of the nature of science and to a number of experiments designed to illustrate the way a research scientist operates. Some of these experiments are described in appendix II. There was no "right" answer. Sketchy instructions were given at first; eventually the student was left almost entirely to himself to devise his own procedures. Experiments were repeated, often several times. It became clear to the students, I think, that science is not the testing of neat hypotheses with neat experiments, but more a search for order in the chaos of conflicting experimental results.

By the end of this time, the students were beginning to take the initiative in devising experimental procedures and even in asking questions to be answered by experiment. Then we began with the book (and the lab of An Approach to Physical Science) in earnest-following instructions, making a lot of observations (many of them apparently unconnected) toward ends which the student could not yet see. Immediately, the spirit of inquiry faded--the passive "well, it'll all become clear in due time, I suppose" attitude re-established itself.

The fact is that the big basic hypotheses concerning the nature of solid matter do not emerge naturally from the experimental results. The book continually nudges the student toward the "right" hypotheses. Alternative hypotheses are not systematically explored and discarded--yet this exploration is the fundamental process of science. A scientist never proves a hypothesis right; he only shows that all the other possibilities he can think of are wrong.

I really think it would be better to come off the con game and just say: "Look, this is the hypothesis and here are a whole lot of experiments that are consistent with it." Because the atomic theory is one of the largest hypotheses in science; the number of relevant phenomena is enormous, it was not invented in a semester, and our students aren't going to invent even a part of it in a semester by themselves. As it is, I don't think the individual experiments are much tied together in the student's mind. It seems as if the big hypothesis just sort of sits out there by itself: it's one thing, and the experiments are another.

I think as many of our experiments as possible should proceed form real questions in the student's mind. This creates a gut-level

"need to know". When the student does follow directions it should be clear to him why he is doing the experiment and what he hopes to prove. At most, experimental directions should be like the operating instructions that come with a new piece of equipment.

The creation of a complete course of this type would involve a major effort: it would be an entirely "new thing".

Another aspect of the laboratory that deserves discussion is the question whether everyone should be doing more or less the same thing at a give time. I believe that the maximum possible diversity should be attempted, although it is clearly not possible to have equipment and materials available for too wide a selection of experiments at once. This implies smaller classes, where the instructor can keep track of what each student is doing.

In addition, we still have the following problems here at Mary Holmes:

1. The minority of able students is still not well served. It is not enough to provide "enrichment" -- they must be systematically challenged on a day to day basis. It is most difficult to respond to their needs without discouraging the less able students.

2. The pace tends to be rather slow, and I am dissatisfied with the amount of material covered. This is related to the overall academic atmosphere at Mary Holmes, which is not good. No one works seriously, and there is a definite limit to how far students can be either pushed or enticed in this environment.

Thomas H. Wirth
Physical Sciences
Mary Holmes Junior College

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The course in Natural Science is an important part of the Thirteen-College Curriculum Program, since it is in the sciences, especially in Physical Sciences and Mathematics that the students' difficulties are particularly marked. I believe it is the defective background on the study of science at the high school level that makes them unprepared for taking up the study at college level. It must be the unprepared, unqualified high school teachers together with unequi laboratories, in school, for simple interesting demonstrations in science, which are responsible for the student's general abhorence to the subject of physical science.

The general goals of the science program, as it is constituted by the Thirteen-College Curriculum, are then to compensate for these educational deficiencies and to prepare the student to cope effective with the remainder of his college career, and in a broader sense, with his career in life. For students who eventually intend to major in the sciences or in other technical fields, the programme must lay the foundation for advanced study. For those students who do intend to take up careers not directly related to science which indeed form the majority of students who enter the programme, the course has mainly three goals.

(a) To develop a certain literacy in scientific matters

(b) To help develop more vigorous and critical thought patterns

(c) To encourage a sense of "at home-ness" in science, an interest in natural phenomena and a sense of the excitement and challenge involved in the process of unravelling nature. puzzles.

The conventional science course places major emphasis on "knowledge", particularly "knowledge of specific facts", "Knowledge of Terminology", "Knowledge of Classification and Categories", knowledg of principles and generalizations, and knowledge of theories and structures - To a greater or lesser extent the conventional course emphasizes problem solving, which involves, "Comprehension", and "Application". In order to solve problems, the student translates verbal material and data into mathematical form, and applies abstractions and generalized methods to particular and concrete situations. Such a course aims at a very restricted kind of comprehension for the student is being tested on his knowledge of methodology in a specific area and on his ability to perform standard algebraic and arithmatic manipulations.

The present course emphasizes knowledge in a differnet line. Knowledge of specific facts and terminology is de-emphasized, where as a familiarity with the "scientific approach" - knowledge of the criteria and methodology common to all sciences - is considered important. The general criteria and methodology are then applied to specific situations. The situations are selected as examples, and the facts related to them are important as means to an end rather than as ends in themselves.

Apart from the general goals set by this programme what one should particularly aim by the physical science course is:

(1) To involve the student in the process of discovery and learning. The informal tone of teaching should attempt to counteract the disinterest, and even antipathy which

so many students have towards science and they should be encouraged into an active and interested participation. We know that we are not going to make scientists out of them, and we also know that they are not likely to discover anything new in the laboratory and that they could gain the same amount of actual information more easily and in less time if we simply gave it to them. But science is not merely a collection of facts. It involves an attitude and an approach to learning. This course intends the students to understand and appreciate more of science by giving them the opportunity to participate in some of the same sorts of activities as professional scientists do.

(2) To give the student confidence in himself and to make him understand that there are many questions which science can answer only tentatively and many more which it cannot answer at all. The student should be led along a logical course of reasoning from what he knows about a topic toward the answer to the question at hand. The students should be led to discover the answers for themselves through questions and experimentation and the teacher should try to develop in them an understanding of what science is, how it is related to other human endeavors, and try to reawaken in them the healthy sense of wonder and curiosity they had as children.

(3) The two facts mentioned above will lead the student to creative thinking.

Theories are conceptual schemes that have developed as a result of experimentation and observation and are fruitful for further experimentation and observation. Hypotheses are meant to guide an experment. Facts are the measurements which the scientist makes and the are the corner stones for theories. The success of science or any endeavor depends on creative thinking and that can be best given by teaching Physical Science, because problems of science do not present themselves with obvious routes to solutions, and so no limits may be set to speculation - Again communication and discussion with each oth encourage the students to co-operative thinking and working so that privately developed concepts can be incorporated into the public science (science as an institution) and this training and approach se the student well prepared for a broaded and intellectual career in li

Design Elements

(1) The course is so designed that it emphasizes that the traditional, systematic, tightly packed, logical science course is not appropiate for nonscience majors and that it

is really inappropriate for most students. It is also based on the fact that conventional courses, with their emphasis upon the learning of a great many facts can seldom communicate to students any of the spirit of scientific investigation, nor any of its excitement, nor any of the scientist's sense of involvement in his work. On the contrary, they often tend to increase the aversion to science which is common among many students, and it also has the disastrous effect of strengthening the students' conviction that they cannot understand science and that they should have as little to do with it as possible.

(2) In order to reduce the large number of topics dealt with in traditional physical science courses and in order to establish a sense of continuity and cohesiveness which the traditional courses often lack this course is designed around one main stem namely "solid matter", and all topics included for study in this course are based on its usefulness in helping to understand the main theme.

(3) Each topic in this course is so designed that it establishes a "need to know", which is in distinct contrast to many science courses, where topics are brought up, argument developed, evidence discussed, all in order to demonstrate the logical solution to a problem or question which the students are not previously aware of and the solution is worked out before the puzzle is made known to the student. This is not the way in which science itself develops and it is not the kind of approach which appeals to most students.

(4) The design of this course differs significantly from conventional ones in another important respect and that is the role experimentation plays in it. Experimentation is at the very heart of scientific endeavor. It is the only way for students to get a real feeling for what science is and it is the only way for them to become personally involved in the study of science. Experiments are made an integral part of the course and most of them must be performed in order that the students understand the succeeding discussion.

(5) Again, simple equipments are being made use of in doing the experiments. Sophisticated scientific equipments no doubt give more accurate results, but nonscience students will not be able to understand or appreciate them. Again, the course is designed to let the students know that there is a great deal which can be learned about the world around them using the simplest equipment. This is of particular importance for those students who go into elementary teaching. If they learn that many important questions can

be answered using only simple logic, careful observation and simple equipment, they will be far better teachers for it.

(6) The course is also designed to call to the attention of students the beauty and utility of mathematics, the concepts of symmetry and the process of scientific "model making", that is, "hypothesizing". Though these factors are not gone into any depth in their application in the course, yet, the students are made to be aware of these threads. It undoubtedly helps the students to develop a greater interest or create a desire to unravel the wonders and mysteries of science.

All the above goals and design elements lead to the basic goal which pervades the whole programme, namely to help the student discover for himself that he is a person of dignity and worth and is capable of understanding and handling any intricate subject he is interested in.

Aleyamma George
Physical Sciences
Talladega College

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The text was chosen because of its thematic approach to physical science, the fact that it emphasizes method and not content. The students, for the most part, do not like our text but it seems clear that their perception of the weak point is precisely what we felt to be the strong point of the book. Their comment is that the book is too "lean" that it doesn't contain enough facts. While we felt that the book encourages student involvement, the student sees this as a weakness -- he wants everything spelled out for him, no work on his part. It is his attitude that needs changing and it is here that a slower pace would be most beneficial. If the student could be made to stay with a unit and see what can be learned from it he would probably feel a lot better about it than if he were allowed to simply slide past it.

Lewis Allen
Physical Science
Forida A & M University

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Student reaction to the PSNS textbook generally points to the fact that the book is not informative enough. There is not enough "meat" or facts given to the student. (The book was designed to give only a minimal amount of information; this forces the student to seek

outside references and to solve problems on his own.) The story line of the book carries the student from concept to concept as he performs the activities outlined in the text.

The PSNS text is supplemented by standard textbooks and the student seemingly prefers reading the standard texts; especially during the early weeks of the course. As time moves on, however, the student reaction changes.

The laboratory is generally very busy and the overall reaction seemingly points to the fact that the written materials are not dull nor too difficult.

Melvin O. Smith
Physical Sciences
Norfolk State College

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After having completed two (2) years and two (2) different course I can now admit that I have noticed a greater success of this year's course (PSNS) approach over the PSSC oriented approach The students in a one semester setting, however, did not have an opportunity to have been exposed to nearly as much material as did last year's class, but by no means do I feel that they will suffer for quantity of experimentation. The PSNS approach had a very wonderful story line, built around the crystal (solid matter) particle and advancing toward a macro molecular structure. The materials that this course (PSNS) contained coincided very well with the materials that I had hoped to use this year and could be de-emphasized or emphasized at any point that I found it necessary due to the tone of the class. However, I had to be very careful in presentation of too much of the added topic material or it would have done an injustice to the story line and continuity of the written material, even though it could have been done.

It was found also that some students needed a great deal more of mathematical application techniques than their backgrounds had afforded. Therefore a special session on Fridays was devoted to applied mathematics. These special sessions were further emphasized during the times needed and a great deal of help on the part the mathematics teachers, who altered their course to offer support to the Physical Sciences. As the course is written there is not a great deal of heavy mathematics, but it was believed that some of the students needed more quantitation techniques than they had previously experienced. And the course could be appreciated possibly more if the student had done real quantitations of the physical systems.

B. B. Robinson
Physical Sciences
Bishop College

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. . . the students/ were/ amazed and filled with satisfaction after comparing their results to the actual weight (I gave this after the class had completed the calculations). . .

The open-ended experiments also had ups and downs. Many students felt that not enough information or instructions were given and if the equipment appeared trivial the students would become playful.

An experiment that particularly impressed me was one that I designed for the students to perform during the study of measurments. I asked the students to determine the mass and weight of a brick (PSSC equipment). The size of the brick prevented the use of the laboratory balances. The following materials and equipment were given to the students.

a small irregular-shaped lump of brick
string
one brick
meter stick
graduate cylinder
laboratory balance
an ounce object

Following a brief discussion on how to solve the problem, the class began to determine the volume of the brick. This required the use of the metric system and measurements that would be used in a formula for regular shaped objects. The brick was not a complete solid. There were three cylindrical cavities. The volume of these holes had to be considered before the true volume of the brick could be found.

The next task was to find the volume of the lump. This was determined through water displacement. The mass of the lump was determined on the balance. With the one ounce object and the balance, the students related mass and weight.

After calculating the mass density of the lump and relating the volume of the lump to the volume of the brick, the students were able to obtain the mass of the brick. Using the conversion factor that they discovered with the one ounce object, the students calculated the weig of the brick.

Not only were the students amazed and filled with satisfaction after comparing their results to the actual weight (I gave this after the class had completed the calculations) but, through the experiment

they developed skills in measurements and the use of formulas, learned to rationalize and become more acquainted with the meaning of density and the units of measurement in the English system and the Metric system.

Charles S. Osborn
Physical Sciences
Southern University

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.....there are some very thought provoking experiments, whose cost is almost nothing. We measure the wave-length of light using a meter stick, a pile of razor blades and a double slit. In the regular program people talk about the wave-length of light.

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Because of the simplicity of Chapters I and II in the PSNS Book, I thought this would really bore the students. Some of the experiments performed were heating salol until it melted then recrystalling by adding a seed crystal, dissolving powders in solution, putting different colored marks on white paper and filtering out specific colors. I must say these ended up being the best experiments out of the 30 odd experiments listed. The reason being, that students could not predict the results. It was a "Gee Whiz" type thing. However, most of the fun and excitement seems to leave once you mention the word mathematics.

The lab experiment dealing with the colored objects aroused students' interest. Several questions dealing with subjects such as what happened to the lines once the filter was placed over them? Will a combination of colored filters do the same thing?

Another lab experiment I think worth mentioning was the measurement of heat evolved by heating two different substances made of different materials to the same temperature. The two substances were marble and steel. Most students expected the steel to give off more heat than marble. All students did extra work and requested extra sessions to extend this experiment. Such questions as will other substances do the same thing, will different amounts of water in each container have any effect on the amount of heat evolved were very frequent.

Dennis Holloway
Physical Sciences
Jackson State College

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We found that a wave is a disturbance that travels in the medium (water). The students found that the wave would remain on equidistance apart unless disturbed further and that they were affected by a barrier. When asked what happens when two waves traveling in opposite directions meet? Most students stated that they were reflected.

I accepted this hypothesis and we used the "waves in a coiled spring" and the poloroid camera to show that they superpose and continue to travel in the same direction. Some of the students that were sure of reflection were convinced of superposition without my having to tell them.

Vallie Guthrie
Physical Science
North Carolina A & T State University

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Give the students four or five bottles of clear, colorless liquic Problem: are any of them the same liquid? Let the students use anythin they want, but point out that balances, graduated cylinders, and thermometers are available. On the basis of miscibility, boiling point, ar density, the students can determine which bottles contain identical li quids. For those who develop careful technique, it is possible to actually identify the liquids from tables of the properties of common li quids which the instructor can prepare.

Don't tell the students whether their answers are right - if they aren't "sure", they haven't gathered enough evidence. You might give pure samples of known liquids if requested to do so, however.

Don't instruct the students on the use of their instruments. As the experiments proceed, hold frequent discussions and have the students compare results. Comparing density and boiling point data will show immediately the need for more refined techniques. Techniques must be revised until precision gets good enough to distinguish between samples of different liquids. Scattered data does not give us much con fidence in our conclusions and leads us to suspect errors in procedure The students should be able to suggest refinements after the principle behind the various measurements are explored.

Introduce the idea that instruments can't be trusted; they have to be checked out. This we often do by measuring known, "standard" quantities. (The density of water and its boiling point, for example) The balance is checked by weighing a most convenient standard - nothin at all. A standardized weight is sometimes used to make sure.

Thomas Wirth
Physical Sciences

The students interviewed community people and collected ghost tales, witch tales, and other folklore (superstitions, rituals, customs, cures).

Generally, the over-all myth unit worked very well because in actuality some of the myths were not so very far removed from some of the superstitions and/or religious beliefs that the students now hold. We included birth myths, hero myths, death myths and a variety of African myths which covered most of these same categories.

In discussing the birth myths (Manabazho, Rama and his Brothers, Buddha, Vainomoinen) the students observed several aspects that each birth had in common with the other. When the class discussed the birth myths, they brought in the possibility of the Virgin Birth as a myth. After all, it does concern--like traditional birth myths--a uniting of something earthly with something heavenly. Buddha's (Siddhartha's) mother unites with a god of Tushita heaven for his birth; and the Virgin Mary unites with God to form Jesus. One point which was very interesting was that because of the similarities of the above mentioned stories that students wanted to assume that the Buddha myth had been drawn from the Bible or Biblical version. The debate really heightened when I asked why couldn't the Buddhist version of Mary have come from the Buddahist's beliefs. This was not done in any way to sway or test their religious beliefs, but id did provide for a very exciting and rewarding class discussion.

As a follow-up assignment on birth myths, I asked the students if they knew any present stories, beliefs or superstitions about births. The results were very satisfying. Some of the myths and tales that the students wrote were even more exciting than the ones

we had had mimeographed. Many students still believed in being able to "mark" a child before birth and they had specified examples to prove their points. One student even composed a birth myth based on the common elements that he had found in the ones we had read in class.

I found it helpful in one case when we were reading the journey myths to assign others that were very closely related. One example was the assigning of "Orpheus and Eurydice" which was a direct parallel with Izanami. In the journey myths as well as the death myths the students made other parallels with Christianity, such as the upper world and heaven, lower world and hell, the return of some of the gods from the lower world with Lazarus and Jesus' resurrection. The traditional heroes such as Oedipus, Jason, Zeus were likened to some modern heroes as Martin Luther King, the Kennedys, Stokely Carmichael or some of the Biblical heores as Moses, Elijah, Joseph. The major purpose in seeking parallels was because the myths when first read by students seemed like fairy tales. By having something with which to compare the myths, the students no longer considered them sheer nonsense. The hero myths, for example, were begun by initiating a discussion on who could be a hero (what are the traits of a hero, who determines whether or not one is hero, etc.). We finally concluded that the universal hero reflects certain experiences common to people in most societies, but he becomes an exception in his abilities to cope with these experiences.

Three very successful follow-up assignments of the myth section include:

1. The students interviewed community people and collected ghost tales, withch tales, and other folklore (superstitions, rituals, customs, cures). I encouraged them to decide on one kind of collection so that they could make comparisons of elements in common that different interviewees had supplied them with. As a result, students who made these collections were able to establish how some modern myths, customs, etc. came about.

2. In conjunction with the <u>African Myths and Tales</u>, I invited an African student to talk to the class about myths, tales, customs of his country. The class responded well with numerous questions that they were curious about. (Very informal). He read some of his native folk tales in which the students were able to compare aspects from previous class discussions.

3. The culminating factor of this unit was the final exam which was unique because of my use of the slide projector

and slides. I showed the students several slides--that either directly or indirectly related to specific myths--from which they were to choose one and show how it could refer to one or more of the myths that we had discussed.

In studying the African tales, the students enjoyed the death stories and dilemma tales better than any others. In the death tales the male students created a very intensive debate because in at least two of the stories, a woman had been the cause of death's being in the world today. Thus, the theory of evilness, lack of responsibility and curiosity on the part of females became a very hot argument. The dilemma tales were successful because they lacked endings, hence the discussions were as openended as were the tales; and the class formulated and supported different outcomes to the stories. A definite debate grew out of our discussion of the dilemma tale entitled, "The Leftover Eye."

Myths

From <u>African Myths and Tales</u>

"How Man Stole Fire From The Lions"

"Death As A Punishment"

"The Old Woman Who Tried to Find God"

"Spider Pays His Debts"

"The Trickster Tales"

Mimeographed Myths

"Manabozho's Birth"

"Rama and His Brothers: Their Births"

"The Birth of Buddha" (Siddhartha)

"The Journey of Nanna to Nippur" (Sumerian)

"The Girl Enticed to the Sky" (North American Indian)

"Descent of Izanagi to the Lower Regions"

From Asisatic Mythology

"Vainamoinen's Birth"

From A Harvest of World Folk Tales

"John Henry and the Machine in West Virginia"

From Soul On Ice by Eldridge Cleaver

"Lazarus, Come Forth"

Reference to "Orpheus and Eurydice", From Myths of the Greeks and Romans

Goodrich, Norma L. Medieval Myths. New York, 1961.

From Jones, Leroi and Larry Neal, eds. Black Fire. New York, 1968.

Henderson, David - "Keep on Pushing"

Neal, Larry - "Malcolm X - An Autobiography"

Grant, Michael, Myths of the Greeks and Romans. New York, 1962

B. Dilla Buckner
Humanities
Jackson State College

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The students seemed to particularly enjoy the special projects that were assigned which reuired their capacities as "critics." I think that one example here may be of interest to the reader. The A. & T. administration turned a house on campus which had sort of been a laboratory for Home Economics into the new Center for Afro-American Studies. A group of art students set to redecorating the outside of the house. They repainted the whole house in a sort of Neo- or Pseudo-African style, with lots of primitive design and much use of wild, clashing colors and such. I had my students do some minimal research into African art, and had them then write papers dealing with such questions as: How authentic are the decorations?, Do you think it was well done? Why?, How does the decoration reflect African culture?, and Does it reflect contemporary American Black culture (in the sense that the Dashiki fashions and Afro hair styles do)? I got great response to this assignment. The students really worked on their papers, asked lots of questions, often approached the art students doing the actual painting, and in general did very well with them. I got the feeling that they enjoyed discovering their own criteria and deciding for themselves the merit of the redecoration based on their self-gained criteria. I also felt

they learned a lot.

I am convinced that my students learned much that I, at least, feel is "important". But I'm not too sure that much of what they learned will show up, say, on the Graduate Record Exam.

John L. Quinn
Humanities
North Carolina A & T
State University

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The study of Black Drama was one of the most successful things we did this year and I plan to try it again.

The second part of the first semester was devoted to a study of contemporary American Black Drama and to a presentation of projects by the students. In structuring these projects I tried to be as flexible as possible, while avoiding chaos; I am not sure that I was successful. The students were allowed to work in groups or individually, to pick their subject from any area of the arts, and to choose a date for presentation. The primary stipulation was that they were to make their decision before December 1st. The plan worked fairly well until the second semester; because of scheduling problems I had forty students in one section, many of whom were still scheduled to present projects. The second semester for one class, therefore, was too heavily weighted in the area of projects and the pace of the class became slow and dull at times. Before using the presentation scheme again, I would re-examine my method of handling the projects and make some changes.

The study of Black Drama was one of the most successful things we did this year and I plan to try it again. As our text we used a past issued of The Drama Review (Summer, 1968) entitled "Black Drama". The text proved to be a very good one: there were critical essays by people such as Larry Neal and Ron Milner; the plays varied in quality considerably so the students were able to make critical judgments; and since the Black Arts movement considers itself allied to the Black Power movement, the subject matter of the plays was interesting to most of the students. Many of the plays were short enough for us to read them in class, and this proved to be an effective manner of approaching the mood of the dramas. In connection with our study of the Black Arts movement Dr. Stephen Henderson of Morehouse spoke to the students on the history and development of the Blues. In the second semester A. B. Spellman from Morehouse ran a series of seminars on Jazz. I wish that at this time I had been familiar with LeRoi Jones' Blues People; I would have assigned either all or parts of it for reading and discussion.

During the semester groups of the students attended Theater Atlanta's "Red, White and Maddox," a movie version of "The Brig" (which approximately one-half of them had studied the previous year), and the exhibition of Thirty Contemporary Black Artists at

the cultural center. Attendance at these events was entirely voluntary.

During the first semester I had the feeling that the course was paced too slow for some of the students, so in the second semester I tried two new approaches. Seven of the students, instead of meeting with the regular class, met as a seminar two hours on Thursday morning and discussed the material they had read. The material considered included Brave New World (Mr. Carey met with us and discussed the scientific implications of the novel), A Separate Peace, The Blacks, Soul on Ice, and a selection of poetry. On the whole, the seminar idea was effective. The mistake which I made, and I think it was a large one, was that I did not ask the students for suggestions in selecting the reading material.

Four other students elected to spend the second semester on an individual Directed Reading program. This was more interesting than the seminar, as the students did design their own reading lists. One student read in the area of experimental drama, one in the nineteenth-century American novel, one in the psychology of the Black experience, and one in the psychological novel. These students kept a bibliography of all the reading they did, and wrote a fairly long paper at the end of the semester. A great deal of the frustration I felt in dealing with the Humanities course came from the fact that with seventy-eight students it is not possible to give this type of individual attention to each student.

After our discussion of Black Drama, one of the boys began to write his own play. Before the end of the semester he had finished it and wanted to have it performed. He selected the people for the characters, designed the set and the costumes, and directed the play. We have a video tape machine at Clark, and Mr. Baker worked with the students so that they were able to make a tape of the play and show it to the other classes.

Ann Carter
Humanities
Clark College

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During the last month of the academic year, my classes undertook a quick survey of contemporary Black art and culture. Reading assignments included poetry, fiction (The Man Who Cried I Am), and essays (Soul on Ice). Student reports touched upon folklore, drama, art, music, the dance, movies, TV. Ending with this unit was advantageous because Black arts could be viewed in relation to and in the prospective of the entire year's work. Before I outlined this unit a white colleague had told me that when he polled his students, they

were definate about not wanting to study Black materials with a white instructor. I proceeded anyway. Forewarned, I asked a great many questions in class and intoned few declarative sentences. It proved to be an effective teaching device. While students sought to clarify things for me, they discovered information, ideas, and relationships for themselves.

Mr. Everett Hoagland, a young admissions officer at Lincoln who has published a number of poems, visited class to read some of his poetry. The students (and Fred Humphries, who happened to visit that day) were attentive and responsive. They questioned Mr. Hoagland and commented on his poems and on poetry in general. They were entertained and enlightened. They were the same students who had asked in September, "Why do we have to read poetry?". I don't think they will ask that question again.

Also while we were working on the Black unit, I noticed that several students carried their books with them most of the time. Having a copy of Soul on Ice sticking out of a pocket seemed to be a kind of status symbol.

Robert N. H. Andrews
Humanities
Lincoln University

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/ Students are polled on the books /

In taking the poll, students were asked two questions:

1) If five works had to be kept in this course, which five would you choose?
2) If five works had to be dropped, which five would you drop?

The percentages add to almost 500% because each student had five choices.

	KEEP	DROP
The Crucible, Miller	9	8
Othello, Shakespeare	6	12
Hippolytus, Euripides	0	32
Dutchman, Jones	53	0
The Slave, Jones	31	0
A Street Car named Desire, Williams	13	0
Mimeogrphed Collection of nature poems	0	28
The Burning, Cady	6	16
The Portable Phonograph, Clark	0	28
The Open Boat, Crane	0	32
Myths: birth, death, journey	0	28
The Centaur, Updike	9	56
A Passage to India, Forster	6	60
Catch-22, Heller	31	20
Poems of Protest, Kenseth, ed.	16	0
All Quiet on the Western Front, Remarque	3	16
Lysistrata, Aristaphanes	0	24

	KEEP	DROP
The Disasters of War, Goya	3	16
The Birds, Aristaphanes	0	48
The Outnumbered, Brooks, ed.	6	4
Pygmalion, Shaw	6	12
Uncle Tom's Cabin, Wright	78	0
14 University Prints, Daumier	0	30
Hamlet, Shakespeare	6	20
American Negro Poetry, Bontemps, ed.	47	4
Soul on Ice, Cleaver	84	0
The Man Who Cried I Am, Williams	81	0

Robert N. H. Andrews
Humanities
Lincoln University

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Although there have been some works taken up this year that provoked much more involvement than others, and some that have turned out to be inaccessible to some students because of length or because of complicated language or other internal difficulties, I am not sure that I would exclude from the course any of the books we used. I think that the nature of the course demands that each year's reading list should be different, and contain new challenges to the teacher and to the students. But our experience this year encourages me to believe that there is a tremendous range of literature and the arts that can be made meaningful and rewarding to our students. Nothing we tried seemed to be simply out of reach or devoid of relevance. Examples:

Gulliver's Travels was one of our least successful efforts; the students had considerable difficulty dealing with the ulterior motive of an author below the story surface. But, I think some of our troubles came from my over-directive leading of discussions. I would be glad to try again to get them to confront Swift's pictures of humanity. While in this case the cultural distance to Swift's England seemed great, the students later dealt easily with distances that seemed greater to me -- ancient Greece or primitive American Indian myths. The lesson for the instructor may just be that it is hard to

predict what leaps of imagination will be the hardest. I would even suggest the value of including specifically "high-risk" items that seem particularly forbidding, for it seems to me now that it is a mistake to try to anticipate very precisely what the limits of student interest and ability have to be.

Crime and Punishment is a very long novel, but my classes tackled it with well-sustained interest. The Oresteia, a triology of three plays, begins with a play particularly rich in obscure lyrical language. The students stumbled in it, and many probably skipped it. But, as we read and discussed the two later plays, I felt that we achieved one of the major successes of the year in dealing with their intellectual content. One girl specifically reported a similar opinion to another teacher, calling it "the most interesting idea we've had" or words to that effect. Another girl spontaneously wrote an adaptation of the final play to make it state some of her preoccupations. (In preparation for these discussions, I was much aided by a critical book called Aeschylus, The Creator of Tragedy by Gilbert Murray, an an Oxford paperback. Other teachers and perhaps students might profit from it.)

Students found it hard to be interested in Eliot's play The Family Reunion. But the play, which we hurried over, turned out to have unexpected virtues (so it seemed to me) for comparative purposes in discussing Wright's Native Son, which we took up next as an interpolation (by student request) in the sequence of the course.

Mark W. Booth
Humanities
Norfolk State College

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I was always in a quandary to decide whether students liked or disliked a given piece of music not so much on the basis of the music itself, but on the basis of that lousy room.

The equipment I used in the Humanities course this year is as follows:

Bell and Howell Monitor slide projector
Bell and Howell 16mm movie projector
Magnovox stereo record player

Generally, I found the slide projector to be undependable. It was awkward to load, and was not at all dependable in advancing and rejecting slides. This often proved to be most frustrating, because on several occasions its malfunction absolutely "killed" the class discussion. The movie projector worked well, but sometimes there were problems in threading it, in terms of getting the film around the soundtrack device, and, again, this was often extremely frustrating. In a project such as this, where projectors are used almost constantly and by a number of teachers, I would recommend a projector of the self winding variety as are now available; they seem to present a minimum number of problems, I think.

The record player always functioned very well. The only disadvantage we had in listening to records was the classroom we were assigned to: it is old, and has an enormous reverberation. It was often rather like listening to music in a shower. There seemed to be no practical solution, so we simply forged ahead, but I was always in a quandary to decide whether students liked or disliked a given piece of music not so much on the basis of the music itself, but on the basis of that lousy room.

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The only problem which would not appear to be readily solveable is one which relates to duplicating equipment: there are simply too many of us (teachers) who need this type of clerical work done. It is difficult for the secretaries to get all of the work done often. Thus, we have to submit whatever we would like duplicated for classroom work approximately one week in advance; the only disadvantage in this is of course that sometimes by the time the work can be done the article is no longer useable, either because it is no longer immediately relevant or because we have moved on to other material in class.

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The only logistical problem posed by the use of the audio and visual equipment was that of transportation and classroom set-up. The Humanities classes were held at A & T in the classroom building which is farthest from the central campus and the project center. Thus, this meant loading the projector(s) and screen(s) into the car, often necessitating several trips, to set up the equipment. Then, because there was another class in the same room, it all had to be taken apart and taken back to the curriculum center, only to repeat the process later for the next class. I found this to be distracting, in the sense that if a student(s) wished to talk with me after class, he couldn't, because I was busy disassembling the screen and winding up cords, etc.

John L. Quinn
Humanities
North Carolina A & T
State University

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The piece of office equipment used most was Gestefax Junior Stencil Maker. This machine was capable of cutting stencils from pages in books and magazines as well as preparing transparencies for the overhead projector from books and magazines. This machine, too, was purchased with project funds. This machine was almost a necessity in reproducing the test which was prepared by the Mathematics group at Tuft's this past summer. Every project should have one.

Reuben C. Drake
Quantitative Thinking
North Carolina A & T
State University

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Stencil Machine -- This machine makes a stencil for the mimeograph from any type of copy. It's marvelous!

Charles Dean
Ideas and Their Expression
North Carolina A & T
State University

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There are a few good audio-visual materials that enhance the curriculum. The first problem is finding out what they are. Much of this problem is eliminated at the summer conferences when audio-visual materials are audited for adaptability in the classroom. It is important , however, that the teacher view all films before planning to use them in the classroom.

A second problem with audio-visual materials is how to schedule them to arrive at a time when the class is ready for them. No matter how well a curriculum is planned, classes have a way of setting their own pace. Frequently, when audio-visual material arrives, the class may have gone beyond the material in film, or it may not be ready for it. Because of the second problem, I have been hesitant to order too many films for the classroom. This year "Dead Birds" came one month after we had planned to use it. "My Childhood", which was planned for the family unit in December, arrived on time, but the classes were still studying the Russian Revolution. "The Organizer" was shown dur. the revolution unit. A conflict with a basketball game forced me to show the film at a most inopportune time.

A third problem with audio-visual materials is setting up the equipment and operating it. While I did not have any equipment fail this year, I spent a considerable amount of time insuring that such did not happen.

Willis G. Jackson
Social Institutions
Talladega College

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At the end of the period we summarized our findings and I then made some remarks about James D. Watson's book, The Double Helix. Some enthusiasm was generated so I suggested that any students interested in reading this very dramatic account of the discovery of the structure of DNA see me and I would order them a copy. This group could then meet informally with me for a seminar. (The seminar was not held this semester because the books could not be delivered befo the adjournment of school. However, there was a great deal of ehthusiasm for this activity and it will definitely take place during future semesters).

Martin Carey
Biology
Clark College

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The students badly need access to paperback books displays, which we hope will be provided in the new campus bookstore now being designed. This year they have had no chance to browse in any bookstore. The library is crowded and social. They have also missed lounging and studying space, but since midyear the new school center has offered new possibilities.

Mark W. Booth
Humanities
Norfolk State College

I used audio-visual materials during the past year extensively for the first time in my teaching career (some twenty years). I found it an exciting experience and would certainly rely more and more heavily upon them in all my teaching in the future, even in relatively "conventional" courses.

The main problem is a way to make audio-visual materials accessible to students for personal study or for review (or catch-up if they had to be absent during a class presentation). There are no proper listening rooms here for records or tapes; there is no way for students to go over slides by themselves. (Or if there are such ways, I did not know about them.) For instance, let us say the class has done a musical study which involves fifteen or twenty records, or an art study which involves thirty or forty slides. When class sessions on these are done, they are done, period. Even if the records and slides were available to the students, what steps could be taken to assure their safety -- so that records were not warped or scratched, or slides marred? (Records and slides in the college library, available to all, are in awful condition because they have not been proper used.)

Vincent C. De Baun
Humanities
Talladega College

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Students in the project make constant use of the Audio, Visual, and other Laboratory Material. They can be found in the Center all hours, even at night practicing for plays, voice activities, etc. This equpiment is invaluable. After working with textbooks only, in the regular program, (except for my personal equipment), I realize more than ever how much it aids in teaching.

More attention can be given to keeping equipment repaired; trainig programs for teachers who do not make use of the laboratory equipment should be scheduled. Many teachers are shy about making use of it for fear of blundering.

Erma G. Dozier
Ideas and Their Expression
Tennessee State University

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It may be hard to imagine how you could act out the problem of inductive and deductive reasoning but these girls did it.

The acting ability of several students was often called upon to dramatize a particular stituation, which contained implicit in it some philosophical point or problem. This was a lot of fun and very well done. It may be hard to imagine how you could act out the problem of inductive and deductive reasoning but these girls did it.

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Instead of beginning with a philosopher writing on the issue of solipsism and then discussing this "issue," I would take off from various students' remarks (for example, about the nature of knowledge), push those remarks to their logical conclusions until the students themselves, by virtue of their own theories, found themselves faced with the issue of solipsism-faced with it not as today's topic but as a frustrating problem which they must somehow solve or find a way around.

Dale Gordon
Philosophy
Norfolk State College

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I began the class the first day of the semester "I am a robot". They tried to refute this, but were frustrated by not being able to. They finally hit upon the difference between robots and humans. Humans have emotions, think, etc., but robots only give evidence that they do. They finally realized and expressed the idea that there was no way to conclusively verify that others were having experiences.

The following day I gave them another assignment. "The world was created 5 minutes ago complete with its memories, fossils, etc." After talking about this for a while, they said that this statement had the same kind of "trick" as the first one. After comparing it with statements like "There is an elephant in the classroom," they realized what the "trick" was viz, no observation could be evidence against these statements as opposed to statements of the latter sort which could be verified or falsified by observations.

The problem of relativity of truth kept cropping up. Many of the students said things like, "If you believe there is an elephant, then it is true for you". There was considerable discussion of this matter. Finally, they began to see that it couldn't be true both that there was and was not an elephant in the room although it could be true that you believe there is an elephant in the room and I don't.

Also arising out of these discussions was some conclusions about factual and semantical disagreements. To elucidate, we talked about different people speaking different languages and saying the same thing. We talked about the conventionalism of language.

I told them in great detail to imagine that they were created by an evil alien race who deceived them about everything. In short, I presented them with the case of Descartes' evil demon. I asked them, if in spite of the circumstances, there was anything they would know. To my astonishment, they came up with an answer very similar to Descartes' - namely they would know what they saw, what experiences they were having, etc.

I asked them all to write a page, just stating something they knew and then asking themselves, "How do you know that?" They were to do this with each item until they couldn't answer the question any more. The next day, we read what they had written. They became somewhat silly and eager to ask the question, "How do you know that". There was some confusion in the essays, but the rest of the class became good at picking that out. It turned out that for all of them the, unquestionable statement was, 'I heard it, I saw it, etc.' There was some realization that perception was the foundation of knowledge.

I showed a movie concerning visual illusions. Then I asked them to give an account in each case of what created the illusion. Although the movie explained the illusions, they were a bit fuzzy about some of them. However, they corrected each other. They came to the idea themselves that, "The brain makes certain assumptions in its seeing".

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I spent a large amount of time during the second semester on the problem of "Does God exist?" What is our evidence for that statement? Can we prove it? Can we disprove it? Can we rationally support it? Are there other means of knowing it - how may we evaluate those, etc. I am teaching at a school which is religiously affiliated. Chapel attendance is required three times a week. The library is closed for Religious Emphasis Week and Minister's nstitute Week. Practically every statement that is made at this school

has the wo d 'God' in it. To these students, a rational consideration of this question was important and intellectually necessary. .. "Why I Am Not a Christian" by Russell, on essay which masters arguments against belief in God, Christianity in particular, and religion in general was one of the most successful items that I used this year. Russell, in this essay, does nothing but give arguments. The students were anxious to refute him in a philosophical manner.

Martha Satz
Philosophy
Bishop College

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The "eleusis" geame led directly to the observation that the hypothesis adopted depends on the selection of the data that is made. Example from eleusis game: Given the sequence of cards"

2 Hearts
3 Diamonds
4 Clubs
5 Spades

the 'next' card in the sequence depends on what aspect of this simple bit of data is chosen. Is the order that the cards must be in increasing numerical order, in which any "6" is acceptable; or is the sequence a rotation of suits, in which any "heart" is acceptable; or is it 2 red then 2 black alternating, in which case any heart or diamond is acceptable. Or are other "orders" possible, waiting to be selected from some other point of view?

The game of Eleusis also worked well in developing the idea of making hypothesis in testing them out. In my adaptation, a student forms a rule, "Remove cards in the same order by suit as you did the first four cards; no suit can be removed twice in the first four cards". This student then acts as director of the group who suggests cards, which are removed if they fit the rule, but not otherwise, until some student is able to make the intuitive leap to the rule, at which time this student starts a new rule and game.

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I have found that my students tend, as almost a "Knee-jerk" response, to take the side of the Black, the poor, and the oppressed without any appraisal of the facts.

When I gave the following statement to my first class:

> Mr. and Mrs. Lewis, a young Negro couple, apply to rent an apartment in an apartment house, are told after several days that the apartments are all rented and that there is a waiting list; but they learn that a white couple, friends of theirs, who applied the same day they did were given an apartment without question.

the immediate, overwhelming response was "Discrimination", "Just because they were Black."

When asked to suggest any alternative hypothesis, none was forthcoming; they were sold on the discrimination hypothesis.

In my second and third classes, I added the following:

> "They told this story to a young black lawyer who had made a name for himself handling civil rights cases. If you were this lawyer, would you want any further facts in order to rule out other possible hypotheses. With this start the student could see alternate hypotheses as possible.

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As an example of construction of hypothesis and solution from data, a code message was given the students; they did not know where to start, but after urging them to guess and follow up a guess and accept it until you have grounds to reject it, they were able to finally come up with a solution. (It happens that there is an error in the code message and once the students had a large enough hypothesis, they were able to tell me where the code message was in error.) A good example in induction and tentative hypothesis construction as a path to knowledge. A good example of the need to make assumptions in order to even start, i.e., assume the sheet has meaning.

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The use of legal cases, evidence, etc., seems to appeal. I used a logic exercise from Applied Logic, Wilson and Moore to produce the Study of Evidence. The exercise is self-explanatory, it worked well, the teacher should probe and expand, beyond the exercise itself, in class discussion.

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In the work on Freud the students did well in constructing dreams, and also stating their interpretation of the dreams they constructed. (I feel sure that some wrote about dreams they had really had, but all dreams were treated in class as imaginary.)

In the class the student read his "dream" to the class, and a group of three psychoanalysts questioned them. I was astonished at some of the insights shown by the questions. After each "session" the class commented on the "dream" as a "Freudian Dream" and on the tactics of the "psychoanalysts."

Royal B. Leach
Philosophy
Talladega College

/ The story "Point of View" by Averchenko/ can be followed up

...by having students write and read in class such stories...

/Averchenko's story/seemed to be a focal issue which came up again and again. Why do Marx and Mill, contemporaries of each other, have such different points of view; Frankfurter and Judge Thayer have quite different points of view on Sacco and Vanzetti; the taste experiments, and, the beautiful girl-old hag pictures led us to see that "point of view" is critical and that "objective view" is difficult if not impossible to obtain.....

The story is very good, short, to the point and interesting to the students. It can be followed up in many ways, the two I used were having students write and read in class such stories, and to present two points of view and have the students explain why in terms of background and education of the viewer.

/EDITOR'S NOTE: "Point of View" by A. Averchenko was reprinted in Thought and Statement, edited by William G. Leary and James Steel Smith, published in 1951 and 1955 by Harcourt, Brace and Company, Inc. It also appeared in 1947 in This Week Magazine. I have contacted both publishers but have been unable to learn from either who owns the copyright or to locate the author. Consequently, we cannot reprint it here. Like the movie Rashomon, the story, which is just a little over a page long, shows the same event from a variety of perspectives./

/Here are three papers by students written in response to the point-of-view assignment./ "Write a short paper showing the same event as seen from several points of view."

The desirability of having the students write a considerable number of papers was discussed in Boston last summer; surprisingly I find many students, even those who do not write particularly well, seem to like to write papers; I have adopted the practice of asking for frequent papers, but asking that they be short ones, 400 to 500 words; I feel that the general quality of papers has improved greatly but do not have a sequence of papers to demonstrate this feeling. (Next year it is my plan to Xerox every paper turned in on four different assignments, about nine weeks apart in the course.)

It was necessary at the start of the year to make many corrections for such errors as "he say", "she run", "they walks", but gradually these are becoming less frequent.

/ The author of the first paper/ was listed at the start of

the course as a student on probation, because of her inability to write a satisfactory paper.

/The author of the second paper/ told me it is a true incident, as it seems to me patently to be.

/The third paper/ is a good example marred by careless/ errors committed in ignorance; the students fail to reread and proof, or perhaps reread and do not catch errors. I have tried to concern myself with these errors and their correction, but also not to kill enthusiasm by too much concern with details (I don't know where to find the golden mean). I try to suggest but not to dwell on the need for improvement and for "proofing" of papers.

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(First Paper)

Being a police officer can really be complicated at times. Just yesterday, I got an emergency call from a lady screaming, "There's been a murder committed in the Men's store!" The Men's store was a block away. Before I coulded hang up, there was a thundering knock on the door. I opened the door. There was a fat man, looking as if he had seen a ghost. He shouted, "Call an ambulance, a man just had a heart attack in the Men's store.

What! I just got a call saying someone was murdered. No! said the man, that was his wife. You know how emotionally and stupid a women can get. The poor man had set down to drink a cup of coffee, he looked very tied. When he reached for the cup, he grabed for his chest and fell to the floor. Are you sure that is what happened? the officer asked. "Yes", said the man. We rushed to the store. There was the man lying on the floor. His wife shoutting, "Officer, arrest the owner of this store, my husband drunked a cup of poisoned coffee". At last the ambulance arrived. The doctor examined the man and said, "Nothing serious, he just fainted. "Oh!" said his wife. I told Henry he was working to hard. When the doctor asked Henry if he had fainted often, he said, "Only when I go shopping with my wife".

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Second Paper)

Now, as I look back on my youth, I can see a black spot that will always have a special meaning to me. It all started at school when my first grade instructor taught us how to play a simple game called leap frog. Being very enthusiastic about all

athletic endeavors, I was eager to learn. That was my first mistake. My second mistake was that I had practically no coordination in my body. When I tried leaping over my partner for the first time, I jumped right on top of him and we both ended up sandwiched to the ground. My only regret about that was that I tried to do it again and again - same result - just on different partners.

Well, my dear uncle just happened to be sittion on the front porch one afternoon when a group of us kids were playing in the yard. There were girls and boys playing together then because we thought that girls were just soft boys. We had exhausted every other stupid game we knew and were trying to think of a new one, when I jumped in the picture with my brilliant idea of "leap frog". When I explained it to my colleagues they all seemed anxious to learn, and a small, skinny girl who lived down the block was willing to be my first student (victim as it turned out). When I fell into my famous jump my usual castastrophe made itself known. The girl slumped down, face downward with me on her back; plus a scream of pain from her and a roar of laughter from the others. When my uncle looked up, he rushed over towards me, hoisted me up into his grip and applied a generous lesson in "Applied Psychology".

His mental picture of what was going on hadn't been perceived by myself or even her for that matter.

Five years later I recalled the incident and said to myself, "Hell, I didn't even know what sex was then!

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(Third Paper)

Presidential Candidate George C. Wallace, at Talladega College, made the following statement, "I, like all loyal Americans should, am for law and order."

His audience, which consisted of Mr. White (secretly a member of the KKK) and an influential Black citizen (Mr. Black President of the local chapter of the NAACP) applauded approvingly.

Feeling they had something in common, Mr. White and Mr. Black became acquaintance striking up a very intimate conversation ending in each of them finding the other compatible with the other.

At the next KKK RALLY, Mr. White told the congregated group that Mr. Black was an all right Negro (or a varied pronounciation thereof) because he believed along with Wallace that the Blacks

who are rioting and looting are wrong and should be punished.

The very same night Mr. Black told the members of the Talladega Chapter of the NAACP, Mr. White had proved himself a moderate because he believedalong with Wallace that all the injustices, the killing, gross resentment expressed toward the Black American should come to a halt.

And guess what, they both are right, or are they? Well ask them.

Royal B. Leach
Philosophy
Talladega College

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A marked difference between

the two sections has emerged.

My classes seem to take on the characteristics of a few students within the class. In one section there was a group of students who would enter into the discussion readily and carry the class along to the point where I would often come into the classroom and find several students at the board or in a huddle discussing the paper we were reading and what they had read in one of the resource or supplementary texts. Often they would be discussing ideas that they read that either supported or in some instances seemed to contradict what was in the paper. Unfortunately this was not the case in the other sections. One student expressed regrets in not being in that section because he had heard about the discussions, however, he would discuss the papers in the dorm with some of them.

In the sections where the students had to be led into the discussion more, the teacher did more talking than she wanted to or was advocated by the program.

Alice Smith
Biology
Tennessee A & I State
University

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The more informal atmosphere I found extremely appealing, for I am more informal by nature. Students enjoy working independently and in smaller groups; sometimes, they were scattered here and there while preparing for class presentations, some in the library, some in the outer lobby with the tape recorder, and some in the classroom. I found considerable difference in the two sections, however, as far as independent work was concerned, especially when it involved small groups. One section tended to engage in more talking about other things than what they were supposed to be doing, while the other section found the process of working with others much easier. Discussions followed a similar pattern with the one section tending to wander from the item of discussion, while the other stuck to the point until it had been explored thoroughly. A similar difference expressed itself in the willingness to listen to what the others were saying without interruption and without inserting their own opinions upon a point not related to what was being said. Both groups, however, were talkative and responsive,

but the quality of their talk and responses differ as well as their ability to make group decisions. One seems to be more group-oriented; group members have not had as much opportunity to exercise their voices in decision-making and react against the stronger personalities in the group who attempt to lead them.

Mary Blackstock
Humanites
Florida A & M University

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March 2

A marked difference between the two sections has emerged, and today's discussions could give no better proof of it. Section 3 was in an unhappy mood, and the class began in the hall when two students began arguing that they had had too many exercises, and had been required to do too much analysis. Instead of the lesson for the day, we discussed their complaints. Some obviously were confused about what they were supposed to be learning. From their point of view, many of the questions had no one answer, and many of the words too many meanings. Instead of saying what the right answer was, in many cases of class dispute, I had allowed them to leave with only a sense of puzzlement. Another kind of complaint stemmed from students who seemed to miss the kinds of discussions and written exercises they had engaged in the previous year in their English classes, for now they were asked to analyse, rather than just react. They were asked to work out the implications of someone else's writing, not just to write down the feelings which another person's writing elicited. One student, on the other hand, was unhappy because she was not doing what she wanted to do, namely ethics! Since the Legend of Gyges /from Plato's Republic/ and attendant discussion obviously was not ethics for her, I asked for an example. She complied by mentioning a discussion the previous year about "pushing buttons" (a reference to CRG's The Chinese Mandarin). She had forgotten the name of the story, but was somewhat disappointed. One of my reasons for using the legend was that the students had read the Mandarin story, and might compare the power of the button with the power of Gyges'ring. None did. As just noted, the one reference underlined the continuity.

Section 4 was quite different. Discussion centered on the problems Glaucon might have if he defined the words 'right' and 'wrong' as they seem implicitly to be used:

viz: right actions are those which respect the principle of equality

wrong actions are those motivated by self-interest.

Once the se two provisional definitions (or usages) were on the blackboard, GW noted that it would be possible for the same act to be both right and wrong at the same time, i.e. that an action motivated by self-interest might at the same time respect the principle of equality, and in fact that one might respect that principle out of selfish reasons. Her comments led to a discussion of consistency and self-contradictions, and eventually, of motives, and the difficulty of deciding just what a given person's motives in any particular situation migh have been. . . .

March 4

With another example of the exercise of power (II Samuel excerpt / the story of David and Bathsheba / before us, we returned to Lord Acton's famous dictum / "Power currupts; absolute power corrupts absolutely." / The discussion went much better than before. Among the high-lights were the following:

1) 'Corrupts'can mean either 'corrupts the person exercizing the power' or 'corrupts other people, i.e., the objects of the exercise of power'.

2) The fact that several students thought that 'corrupt' could have a positive meaning akin to 'rehabilitation', in that it means 'to reverse oneself', and thus that evil could be corrupted.

3) An observation that if anything could claim to be absolutely powerful, it would be God, and therefore, that if Acton were right (if what he said were true), then God would have to be absolutely corrupt (on the assumption, of course, that he were omnipotent).

4) Conversely, since some thought the devil to be the only absolutely corrupt thing or person, he, rather than God, by Acton's dictum, would be the omnipotent one.

5) A statement of the many sources of power, including money, votes, intelligence, ancestry, weapons, etc. Only one section mentioned leadership ability. Neither mentioned plain physical strength, nor the ability to instill fear (among other possibilities).

6) **The difference between kings (like Gyges) who think themselves the highest law, and kings (like David) who admitted that there was someone else to whom they had to answer for their actions.**

James Corum
Philosophy
Clark College

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In evaluating the course as a whole, I'm having a hard time. The main difficulty is that in one of my groups I think it was highly successful. In the other group, as a group, it was a dismal failure. I term the "good group" successful because the individual work and the class participation of each individual has markedly improved during the year. The genral level of comptehension of the course is high; the attedance level (I do not take roll) is 100% most of the time and the discussions often extend beyond the time limit. The attitudes we had hoped to develpo have, in this group, and the students realize their achievements. A fow have even brought outside visitors. The students are close in ability and the slower students have learned a lot from their classmates and though quieter, often, after listening to the more aggressive members of the class, challenge them with penetrating questions. The stidents who enterdd the group in February (from other groups) have been much more active in their participation and their work has improved. The students like the course and feel that they have learned a lot during the year.

I am having a hard time analyzing why the course failed in the other group. At almost no point in the year did the group do work equal to that of the first group. About five students have done good work--these students are involved with the course, like it. They range in ability but their positive response has been because they find the questions raised, things they want to talk about. The class as a whole is a quiet one. The students refuse to talk, show little or no interest in anything we have done and I cannot find out what interest them. The apathy includes other things--mention of the boycott brought groans (grins in the other class). The 'interested' ones prefer to be lectured. Those who come rarely, try to dominate in order to make up for their absence and I was poor at controlling them. I neglected using harsh discipline (daily tests, compulsory attedance, etc.) and might have been wrong in this. But I'm not prepared to say what caused the failure, especially since I have had many more 'conferences' with different students in this class and a few of the non-attenders stop by often to talk--about philosophy. In all, I don' think the problem is any one thing but a combination of teacher, students, and course that did not mesh.

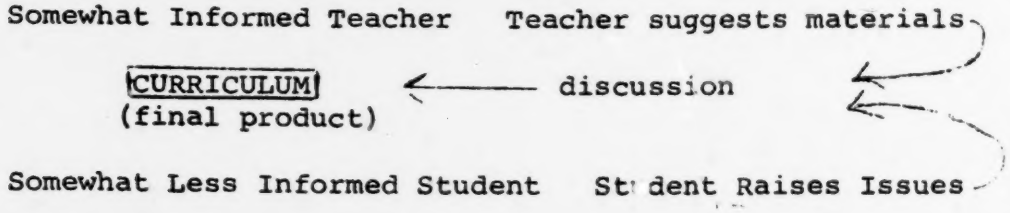
Leslie Sanders
Philosophy
Southern University

The subject groups I used grew out of the student-teacher relationship . . . and were certainly different from all other groupings in the 13-College Project.

Julian E. Compton
Humanities
Florida A & M University

The subject groups I used grew out of the student-teacher relationship. They were a joint arrangement between us and were certainly different from all other groupings in the 13-College Project. We thought the topics worked.

The method of establishing curricula may be diagrammed thus:



Ideally this diagram accepts as a premise that the student can raise issues relevant to his life situation and that the teacher can suit materials to that life style. If the student cannot always zero in on the important issues or if the teacher cannot suit materials to the issues and falls back on traditional materials approaches then an effective dialogue does not take place. However, if the process works, the teacher and the student really meet each other in the curriculum which they have jointly constructed. The curriculum is not the province of either of them but is a shared possession, a bridge between their two worlds.

A further consequence of such a process is that once a student has been through such a course, then he is qualified to suggest materials as well as issues. Having seen the process work and having been exposed to all the materials he is then in a position to evaluate what will work in the future.

The next stage of the process would look like this:

Somewhat Informed Teacher -
Suggests Issues (that have worked) & materials

REVISED CURRICULUM ⟵ discussion

Somewhat Informed Student (completed the course) - Suggests issues & materials

Somewhat Less Informed Student (beginning the course) - suggests issues

This process calls for much more involvement with the students in making curricula. It suggests that no relationship is as important as the individual teacher with each individual class. It may call for entirely different curricula for two classes taking the same subject. It would probably mean much more work. It would make planning much more diverse and more involved. But it might be a step toward the student-faculty involvement we seek, and it would involve students in the one thing they share with the faculty - their concern for curriculum.

/ How did this work in practice? /

Themes, Subject Groupings

. . . The structure of my course was determined by student suggestions almost completely. It is interesting that they chose more traditional ways of approaching the material. Our year was structured in the following manner:

I. American Black Culture -

American culture was favored over African culture by the students.

A. Introduction on "blackness".

This was not important to the students at the time.

B. A historical survey of American black culture.

Literature and music were specifically asked for. I added painting as another important art form.

II. European Culture from Greece to the 19th Century
The desire was to study it "in order" or chronologically, and to study all of it. Afterwards the Greek, Hebrew and Renaissance periods were favored. The Middle Ages was especially disliked.

III. Modern Culture

A. Social and Political Issues

After a long time in white culture they wanted political issues.

B. Scientific Issues

I introduced material on world view and then moved into Impressionism and Cubism. The arts were more interesting than the scientific world views, though they thought they "should" be studied.

C. Individual Man

The socially-oriented black-students did not see the distinction between individual and collective man but later began to appreciate their own individuality.

Observations on Teaching Practices

1. Our project uses records and visual materials much more than the regular program.

2. We have access to a variety of books whereas the regular program has one textbook.

3. Our students are encouraged to interact with the teacher in class discussion more than in most classes in the school.

4. Students suggest methods and contribute materials much more than in the regular program. Their record supply can be counted as a resource for the curriculum.

5. Our students not only study painting, sculpture, literature and music but also create their own. Our resources do not provide materials but that doesn't stop my requiring creative work.

6. Our students are encouraged to take part in politics, to speak up their rights, to challenge authority, to organize peaceful protests and generally involve themselves in all of campus life.

7. Students conduct classes whenever discussable open topics are the issue of the day.

8. The class is considered an open forum and visitors may drop in and often do. Outsiders may come to our class and present their views or campaign for certain issues.

Effects of the Project on Me

1. I am more willing to teach an unstructured course with fewer content goals.

2. I am now prone to teach culture by selecting representative figures and art objects rather than seeking to be comprehensive in a survey sense. This approach which is exemplified in Siegfried Giedion's Space, Time and Architure was the general approach I took before.

   However, now it has become much more narrow. For example, previously when teaching the Middle Ages, I would use the Chartres cathedral, the chant, Giotto's frescoes, The Divine Comedy, and St. Thomas Aquinas as representative of their different areas of culture during the Middle Ages. Now I am more likely to pick one of those cultural expressions - the one which the students themselves find most interesting or most important, and emphasize it in approaching the Middle Ages while excluding or minimizing the other examples. I consider this the major difference in my teaching approach from having taught in the project.

3. The program has created a feeling of depression and irritability and caused me to be more rude in my personal behavior. (so says my wife.)

4. It has been intellectuall stifling.

5. It has shown me that structures move exceedingly slow, that department heads in the regular program favor some vague pseudo-unity over creative teaching, that the best and most experimental teachers are usually eliminated.

6. The program has shown me that students are still being trained to obey the highest authority and to submit willingly and without question.

7. The program has exhibited the extreme authoritarian nature of the school. One is led to believe he can be creative and suggest new programs. However these programs which are prima facie the basic need of the school are then summarily rejected and the faculty who suggest the changes are phased-out. This has happened both within and outside of our program and seems to be more a characteristic of the total school philosophy.

8. The program has convinced me that to have a textbook on time is impossible. The purchasing practices are so bogged down in red tape that I would rather buy a book and Xerox the whole thing than try to get it through our purchasing department.

9. The project at its highest level has had a totally demoralizing effect on me. The project advisors for last summer had their own ideas, methods, goals and means of disseminating the same to the teachers. A rather able bunch of teachers were asked to sit back and listen, or to chirp at the appropriate time. There was no communication. A full program in sensitivity training should be conducted for the first two weeks of the summer conference. A trained psychologist should lead it. It would establish some ground for communication.

10. The most complete demoralizing came at the Fall Conference at Atlanta. Some teachers, I was not one, had staged a mild protest of a "fast" over how certain money was spent. The response of the "high" officials of ISE was to denounce the questioners as "jackals biting at the heels". This kind of response to a questioning protest by a sincere teacher can only stifle his teaching, dull his sensibilities and cause him to wonder "what's the use!" These sincere teachers were not asking for themselves but were concerned about a "fair shake" for their students. To denounce such a student concern, expressed in the best tradition of Gandhi and King, is to close up to the whole problem of the student on the campus. If teachers can't ask questions, students can't ask questions. If neither can ask questions, but only ask ISE & CRG officials for the "right" answer, You no longer have education, you have training - educational authoritarianism. That's why I feel demoralized.

Detailed Accounts of Classroom Activities

1. One very successful class experience occurred during quarter II. I first taught Early Renaissance, High Renaissance, Mannerist, Barogue and Rococo, art styles giving one day to each style. The method was to show slides and let them work out their own definitions, which were rather flimsy. I then assigned a paper for them to take one example of painting and one of sculpture for each of the five styles and tell why it fit a particular style. As a final classroom activity I showed new slides for an hour of review. They were asked to evaluate the new slides, as to style. They were also asked to describe how the same subject would be done in a different style.

   I would say the results were tremendous. About 80% of the students participated orally in the review session. Apparently the reinforcing experience of visual exposure - book research - visual review was quite effective. The general ability to interpret styles and to explain "why" was very high. The general success of the assignment was observed by a visiting CRG representative.

The student goals are listed below:

   1. The students became involved in a "Book sense" though not in an active sense.

   2. They learned to analyze a painting.

   3. They developed their taste to the minimal extent that they generally liked Renaissance art for its regularness and rejected the frivolity of the Rococo style.

   4. They learned some subject matter, namely about Michelangelo, Raphael and Rembrandt. Michelangelo appealed to them as did Van Gogh later because each was familiar to them from the movies. Again reinforcement this time of an

2. Other activities which were successful included performance activities - reading folktales, or acting out The Dutchman, or even making up folktales. Performance activities such as having a class member lead class discussion wasted time and strayed completely from the most elemental issues. It should be noted that the students favored this

student-led approach at their Washington conference. They pointed out that quiet students talked more this way. The loss of issue-oriented discussions may be worth the extra student involvement.

3. Some of the greatest failures seemed to result from long readings or whole works and perhaps one major success came from groping through "13 Ways of Looking at a Blackbird". For 2 days with two of three classes deciding the birds was death. Tests in our reading clinic seem to bear out that the students cannot read very well (8 of 97 read on a college sophomore level on the Nelson Denny Reading Test.) And yet the students favored reading whole works to excerpts in their Washington conference. What is the solution?

4. Classroom use of blues, jazz and soul music was successful - they're still arguing over a definition of soul and whether "the Young Rascals" have it or not. Classical music is less successful and still rates as "high yaller" or "their kind" of culture.

5. Political material interests most students but the issues have generally been decided and there is little joy in the "quest" for the answer. By the way, the militants carry the discussion in most classes. Without them - nothing.

6. A very successful unit was done on sexuality. The student chose this as the most important topic to them when we began constructing the curriculum. We did no reading; I presented the material and let them react. They reacted freely. Several students told me personally that this was their most enjoyable experience in two years of school. I had them write reaction papers on their views of pre-marital, and abnormal sexuality. They wrote with more involvement and interest than on any other topic used the whole year. The general attitudes were quite similar on sex which reflects an acceptance of some authoritarian code, though somewhat open-minded, handed down from somewhere.

7. An extended personal evaluation on the question "Who Am I?" was moderately successful as a final assignment. They were asked to accompany their cultural evaluation with a creative work. This was a freeing experience with many doing colleges, pop constructions and poems. One student submitted a tape which used 2 groups singing at 3 different speeds and arranged a la John Cage.

. . . doing an assigned homework exercise still often depends upon whether the student will be graded for it.

I feel that we as teachers and administrators have let permissiveness go too far for the students' good: students, in spite of their clamor for intellectual independence and freedom of choice, still seem to need and want adult direction and discipline. For example, doing an assigned homework exercise still often depends upon whether the student will be graded for it, or the still too-frequent question - to the teacher - "what is it that you want me to do in this assignment?" The project has made me more aware of the necessity of individual student involvement in class activities if purposive learning is to take palce. After two years in the project, I am looking for a viable system of effecting a satisfying balance between a healthy climate for permissiveness in which the student can really learn and a development of self-discipline on the part of the student.

L. Beatrice Clark
Quantitative Thinking
Florida A & M University

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. . . As the course progresses this student began to learn and understand that science was not the memorization of words, but rather had to do with ones' ability to observe, interpret, and communicate these interpretations to others in a simple coherent manner. In other words this student was learning to think; he was learning how to attack problems; and most important, he was developing confidence in his own ability to solve problems.

At the end of the course this student stated how much he regreted the end. He stated that he was just beginning to really get with it and that he never really enjoyed a science course before.

All of the students, however, did not turn out like the student described above. The loudest cry centered aroung the course content. Some students felt that the course was lacking in content material - something that they could hold. In a sense, they were asking for more of the traditional materials "like they are teaching across the hall." Why?

One serious problem facing the course is what to do about the minority (approximately 1/3 of the students) who feel that the course is lacking in content material. These students cannot be classified as being at neither the bottom nor the top of their class, (ability - wise). The cry of these students cannot be ignored. They refuse to appear to rather our "giving them a fish". This observation has been on several of the campuses.

Berry Hempstead
Physical Sciences
Tennessee A&I State University

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The students liked everything about the course at first. Frustration set in when they discovered just how difficult it was for the class to be conducted without teacher lectures and /depending upon/ student initiative. Antagonism against other class members was more common than antagonism towards the teacher.. The class, for instance, was divided among the major parties during the election unit. It was further divided among the major issues in the campaign. It was not long that most of the students discovered that reports on the issues and the parties were not well prepared for class presentation. They also discovered that, in spite of the reports, the students were to be held responsible for the material. One group reporting on "Law and Order" had not taken time to consult the Kerner report on riots. Also, little was known about the working of the Supreme Court and its latest rulings. The class heard the report, asked no questions, and considered the matter finished with the report. A similar story can be told about groups that did reports on the Russian Revolution and various family structures around the world. In general, all small groups that did projects and reports to the class did not function as a group and the reports reflected individual effort only.

Although, the students had copies of Newsweek, few students were able to make higher than sixty on the multiple choice exams prepared by Newsweek. All of them knew that reading a daily paper and watching the news would provide them with a passing score, but few of them were willing to go to this effort. Of great concern during the end of the year was how much their low scores on the current event exams would affect their over-all grade.

Some of the students spent the entire first semester trying to find out from the teacher what were the correct answers to his questions. Although the teacher had used many examples in class to show that most questions asked did not have one correct answer, some of the students continued to think that a high school grade

was directly related to their ability to answer questions the way the teacher thought.

In comparison to last year I was unable to inspire the students to work on their own this year. All of the students were working for a good grade and most effort that was with this in mind. The students were always asking whether any outside books were required. Some students did outside reading, but with the idea that the teacher would give them special consideration for the effort. One girl, when she started her project, asked if I wanted her to turn in a diary on the number of hours that she would work each day. She was willing to do the work, but wanted to make sure that I gave her special consideration for the length of time that she would spend on the project.

Talladega College had a number of outstanding lectures and programs this year. Five scholars came to the campus and lectured on African Heritage. Horace Mann Bond was on campus for two lectures. Four members of the Department of Political Science at Dartmouth were on campus and conducted non-credit seminars in government. The only time I could get students to attend these events was when I required them to go. If I left their attendance voluntary, a few, and usually none, would attend.

Willis G. Jackson
Social Institutions
Talladega College

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This year has been one of experimentation with some success and some failures. The continuing focus on the student-his needs-his perception of relevance and his mathematical maturity seems still to be most valid. Student activity and participation in the classroom has made a number of topics in mathematics "real" to students rather than the mrer formalisms which have, at other times, encouraged them to "play an academic game". As a result of this year's experiences many students question and argue to support their analyses and solutions of problems more effectively than previously. Many understand better the skills and areas of mathematics to which they had previously been exposed, and they have developed new skills and knowledge. However, grades have presisted as a prime objective of most students. It was also true, but with notable exceptions, that students tended to exercise a freedom not to study mathematics outside of class, until rather direct rewards for effort were offered, to which most students responded with activity and effort.

. . . A second area of difficulty is in finding a relevant

curriculum. When the teacher no longer determines course content using requirements of the subject structure, then student relevancy is increasingly important. Technical mathematical skills are relevant to the science, engineering or business majors, whereas factoring, simplifying radicals and the quadratic formula are valueless minuatae to the literature, fine arts or history majors. A fine balance is necessary. Amusement which is the opposite of boredom is not satisfying to these students. And mathematics, as an intellectual discipline, is responsible for developing relevant concepts and skills for these young people.

. . . Students were concerned about grading.

> "The idea is if the report is done, then you have an excellent change for an"A"
>
> "Grading not fair because it seemed your grade is predestine. If you improve you get the same thing, but if you fall you get less"
>
> "...the Liberal Education Group is doing easier work, while the Trig Group is much harder work and getting the same credit"

Carl Whitman
Quantitative Thinking
Florida A&M University

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There was a problem with student attitudes that permeated the entire freshman part of the program and caused problems that could not be explained by the expected aversion to Physical Science. The students adopted a very pragmatic and materialistic approach toward their studies and would only react when there was a direct effect on their grades. There was essentially no evidence of interest in the subject matter and when a student did begin to show a glimmer of interest, his classmates (at least figuratively) jeered him.

... There was a reading room in the library basement and the science lab was open and available to students for study and extra work, but neither facility was used very heavily at all.

. . . We had almost no success in getting students to use reference material. They complained that the book didn't have enough content yet they refused to go outside the book to sources that do have the content (even when specific references were given). Perhaps the presence of a more convenient library arrangement in the

science lab would help overcome this problem, but there is little confidence that this is so. It is here that the problem of attitude toward science directly impedes progress.

Lewis E. Allen
Physical Science
Florida A & M University

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Finally, it should be noted that there were attendance problems, especially throughout the second semester. From mid-February on, I never had better than 60% attendance in any week (some sessions perhaps up to 90%, others as low as 20%, and in the several days before a vacation, occasionally -- literally -- no one). So when we broke into small groups, it might very well chance that a "group" would be composed of one or two persons.

I should add that this attendance problem was not peculiar to TCCP or to my classes. It was epidemic throughout the college. Many of my colleagues who have served here for years have remarked on what they call a vast, generalized, undifferentiated anti- intellectualism -- something they have never seen before at Talladega. It became "the thing to do" not to attend class. And of course TCCP fell victim to the infection, too.

. . . In the second year program, the experimental practices are considerably reduced, mainly because it is so difficult to organize cooperative effort. The students all have two TCCP courses in the regular program. Preparation of panel discussions, plays, etc., is pretty hard. Also, more and more of my students indicated that they did not wish to go on with such efforts, but to undertake "serious" work. When given choices, early in the second semester, of working in independent projects or in plays or panels, the great majority opted to work alone or in very small (two or three person) groups.

The result was some interesting art work and a number of collections of poems and scrap books -- all very worthwhile, in my opinion, as they broadened means of expression for many students.

It further occurs to me that some students found it difficult to go beyond strict classroom requirements because now, as sophomores, they are involved in fraternities, the campus dramatic group, newspaper, etc.

Vincent C. De Baun
Humanities
Talladega College

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. . . A stimulating or dull class in which true or no learning takes place may be conducted by my teaching method. A successful class depends upon the students having prepared their assignments in advance. This sounds defensive, but if you have ever planned a discussion and found the students unable to discuss, you know what I mean. Prepared students dominate a class; unprepared students may become petty or argumentative and, worst of all, they may fall back on common knowledge and meaningless cliches. I would say that even when the assignment to be read is written by a contemporary, relevant Black author like Eldridge Cleaver, the proportion of students well prepared for discussion is not much greater than when Hamlet is assigned. Too often, out of dispair and produced by his own survival instincts, a teacher will resort to non-learning activities such as games, authoritarian threats, unplanned written assignments in class, talk, and nonsense to fill the time. It is a freak-out, and I cannot abide it. But I do understand it. If you try to teach when the students are not ready to learn, nothing happens. It is a bad presentation.

It has taken me all spring to recognize the discouragement that the unprepared students had been giving me. In my previous years of teaching I would say that 75% of my students did their assignments regularly. At Lincoln I would guess that 35% do. Another 40%, although behind, will eventually do most of the work. As for the other 25%, they are careless about assignments out of habit. It is a way of life for them. Yet, as a teacher, I have to face the fact that I failed to help 25% of my students to advance. You understand that I am not talking about grades. I am referring to the part that formal education can play in a person's total development as a human being. Failure in these terms is failure indeed.

Two positive notes:

1. The eight students who tutored three times a week in the Oxford Elementary School contriubted to the lives of many children, and they received benefit and satisfaction for themselves. In a letter of thanks Mr. Jackson, the Elementary Principal wrote, "I would like to suggest the paln /~Lincoln students tutoring in the Oxford schools_/ be reinstated in the beginning of our 1960-70 term. . . ."

2. I am encouraged by the creative, or at least, self-expressive, writing that some of my students did. They are just beginning, of course, but some may go far. There seems to be a lot of talent at Lincoln.

Robert N. H. Andrews
Humanities
Lincoln University

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This touches on another kind of attitudinal problem, one which stems partly from the interplay of the students' self-centeredness and grade-centeredness, and partly from the financial arrangements and policies of the program. Roughly, the attitude of many of the students is that the program is a free ride, that it owes them a living, that for having joined it they deserve and are entitled to tuition, books, etc. Furthermore, program courses have somewhat the same status. The students feel (with too much justification) that if they only put in their time in class they are assured of a "C" in a program course, and that it will be extremely difficult to earn an "A" and pretty hard, at least, to earn a "B". As a result many students ask, "Why should I put out for program courses? I don't really know how to go about getting an "A"" -- the courses are too open-ended for that -- and getting a "B" will require so much hard work that I could either invest my time better in improving my grades in the non-program courses or get a little rest and relaxation. Besides, almost no matter what I do, I'll get my "C" anyhow." This seems to be the working policy of most of the students. If this is correct, it seems to me we may be generating a syndrome of "educational welfarism," and that this ill suits the purposes of the program, the needs of the students, or sound educational practice. I am not sure what to do about it -- though I think it is incumbent on us to find or devise some cure for this problem, but I suggest that it is vital to delineate more clearly and then explain better to the students the requirements which they incur in joining the program and the standard of performance which we expect of them. These requirements should be firmly but humanely enforced. The problem of standard is, of course, the rub. I certainly don't think that we should return to any kind of standardized evaluation of performance, nor that any measure of time put in will be appropiate. And yet it is necessary that the students have a better-defined notion of what is expected of them, and not just in philosophy.

Richard M. Burian
Philosophy
Florida A & M University

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Another student having caught the pattern-seeking fever wrote up an additional pattern she discovered when she arranged a deck of playing cards in order (the number of the card equals the som of the card and the values of the preceding cards. This was with four of each card. She generalized to a deck with N of each kind of card.) All this she did on her own. I asked her if she would like me to give her some kind of credit (i.e. for an outside challenge), but she said she wouldn't have done it if she had been thinking about grades and refused.)

Roger Ingraham
Quantitative Thinking
Bennett College

<u>To a large extent, the program has conquered the problem of passivity in the classroom but the fundamental passivity of the students with respect to their education remains</u>.

As a major portion of this report will indicate, both my colleague in philosophy at FAMU, Carlo Giannoni, and I arrived here last fall quite naive about the backgrounds, attitudes, training and skill of the students we were to teach this year. Even more important, we were positively misled about the impact of the program on them last year. I consider it a serious indictment of the evaluation procedure (formal and informal, central and local) that our beliefs about the kinds of problems we would encounter were further from the truth <u>after</u> the summer conference than before it.

1) Concerning the skills attained by the students: a first indication of the gross misevaluation of students' progress is that we were hired to teach philosophy of science. Now philosophy of science is a critically necessary part of the liberal arts curriculum in this day of rapid scientific-technological progress and the growing alienation from science of the vast majority of people, including non-scientific intellectuals. (For more details on this, see pp.1-3 of Dr. Giannoni's report). However, to study philosophy of science, even at an introductory level, a large repertoire of skills is required. Thus, before I accepted my position, I explicitly asked whether the students could read at the college level, whether their exposure to science had gone beyond the science-as-a-collection-of-facts to the here's-how-the-theory-ties-things-together stage, and whether they could be relied on to read outside expository matter of a popular science nature and get the gist of it. It was <u>only</u> when I was assured that by working in the program the students had accomplished these things that I accepted the job. In fact, as it took us far too long to find out, the vast majority of the students are nowhere near ready for this sort of work. The students were not able to do independent reading. To cite some of their deficiencies: the ability to comprehend a text of a few fairly simple paragraphs as found on a standardized reading test is inadequate. On the Nelson-Denny test, Form A, the median comprehension score for the sophomores was at the 11th grade level, with about ¼ of the class <u>below</u> 10th grade, including about 5 students at the 7th grade level. This immense range of comprehension scores (7th-14th grade) indicates major pedagogical problems. For one thing, any dependence on class-wide outside readings is essentially prohibited. Furthermore, good comprehension scores do not necessarily reflect an ability to analyze reading materials. I think the skill of analysis would minimally include such items as

ability to seperate the author's viewpoint from those on which he comments, ability to tell a statement of opinion from an argument for an opinion (at least in the clearer cases), ability to determine which are the premises and which are the conclusions of an argument, and , perhaps, ability to find unstated assumptions of arguments which depend crucially on such assumptions. These skills were almost wholly undeveloped in our students. Dr. Giannoni mentions in his report the difficulties his students had with E. Fromm's "The Case for Unilateral Disarmament". After reading this aritcle, and I know that most of them did read it, not one of my students understood that the core of his argument involved the claim that even a successful policy of nuclear detterence was unacceptable because of its ill efforts on the "quality of life" and because of the callousness toward violence which such a policy would generate. (Our evidence comes from both classroom discussion and an essay question on the term final.) Now I grant that this article is hard, but the point remains that it was not the vocabulary, but the complexity of the argument structure and the variety of viewpoints dealt with which caused most of my better readers to miss the point. And, in particular, the students did not understand whether Fromm was presenting his own views, when he was presenting objections, when he was presenting opponents' views, and when a claim was suppose to support his basic contentions. I should add that the students' ability to "catch on" to a reading seems fairly dependent on their familiarity with the content of the reading or the "line" taken by the author (and this provides an opening for the instructor in preparing the students to handle readings) and/or their ability to emphathize with the position taken. Thus Fromm's arguments that deterrence might not succeed were much better understood than his arguments that succeessful deterrence might not be a good policy. This example is not the best I could have chosen to support my claim that comprehension depends on empathy because of the difficulty of the reading, but the claim seems to have been true for all of the readings employed in the course of the year.

Finally, as an example of the effect of the wide range of backgrounds and reading skills on students' comprehension when readings of any complexity are depended on, let me indicate that at the end of our unit on disarmament, some students could produce fairly standard arguments to the effect that deterrence or gradual disarmament would or would not work as a policy, most could state these positions fairly clearly but could not argue for them, and some were utterly confused. (One girl who did not state a clear position was concerned that we protect ourselves from the chief three communist powers: Russia, the Soviet Union, and Germany).

2) With regard to the students' understanding of, and attitude toward, science, their performance during the first quarter this year would indicate that the science course in the program last year did not do much to change the basic "set" with which the students came to college. I maintain this ought to be a major goal of our first

year science program. Thus most students 1) did not have even the beginnings of an understanding that science and technology are not identical, 2) did not make any seperation between theories and facts, 3) believed that the scientific method involved following a "cook-book" and had the objective of collecting facts, 4) did not conceive of scientific problems as opened-ended or intellectually challenging rather than a matter of sheer persistence, 5) had very little idea that there are matter of criteria for deciding what"facts" to collec' nor any working sense of what such criteria might be, (e.g. the notion that it might be especially interesting to see how small particles bounce off atoms was entirely new -- and it was hard to get them to see why that should be interesting.)

Perhaps more important than the problems just mentioned which, after all, are just the sort of thing that course work ought to grapple with, is the undiminished alienation felt by most of the students toward scientific matters. Even to use the label "scientific" at this stage is dangerous -- it turns most students off. They think of arbitrary assignments, numbers that don't come out right, facts that don't mean anything because they don't fit together and are so hard to learn, the fakery that went under the label "science" in their high schools, a course they found terribly hard last year, and a never-never land, in which they have no voice, from which atom bombs, police prods, helicopter gunships, better washing machines, computers and tooth brighteners come. However much truth there may be in this image of modern science (and some truth there surely is), the alienation is that of an outsider, one excluded from the inner sanctum, rather than that of someone who is wise to the beast, and presents a very thorough block to serious attitude which provide against the doing of science, but it is obvious that it is a most serious obstacle to anything highly codified, routinized, etc. labeled "science".

3) The last major introductory comment which I will make by way of evaluation of what the students were like will deal briefly with a whole range of attitudes. First, my very subjective impression of the predominant attitude toward college: for the program kids, college is a pipeline to jobs and socio-economic improvement -- surely a realistic view for black students today. However, the preponderant conception of the nature of that pipeline seems to me incredibly passive. That is, if I am right, most of the students feel that putting in their time and no more is what is required of them. They are not in college to change themselves, and insofar as they are in college to learn skills and become employable, its' the job of the college to "process" them. Thus they complain seriously that if something is desired or expected of them, but not enough pressure is put on them to forse them to do it, it is the teacher's or the school's fault when they don't do it. For example, at least ten of the student made this sort of complaint to me privately in talking over their non-attendance at the play "Galileo". (Each was provided a ticket for a performance on one of the four nights, the student having the op-

portunity to choose the most convenient night. Because of logistical difficulties, transportation was not provided. The theater was six or eight blocks from campus. At least 75% of the students did not attend.) To a large extent, the program has conquered the problem of passivity in the classroom, but the fundamental passitity of the students with respect to their education remains. Thus, I think they act as if education were something that happened to one rather than something that one engaged oneself in actively. Put differently, I fear that we rely far too much on the increased self-expression of the students as an indicator of progress. This is an absolutely vital step, but it is only a step, and even if we are entirely successful in getting the students to express themselves, we will not really have made educated (or self-educable) persons of them unless they also learn substantive ways to work out, improve, clarify, and test what it is they have to say, unless we can teach them how to process their own views and opinions so that they adjust better to hard facts and sound arguments. (I hope I don't need to add that this will not be accomplished merely by increasing the information available to them.) A major part of that process is in learning to apply criticism to oneself and to one's views, not at random, but in a fruitful way. This is a matter of attitudes as well as tools. Neither of these seem to me to have been developed adequately in the first year of the program at FAMU. The fact that the students don't have the basic tools of criticism or a truly self-critical attitude can be supported in a number of ways. In additions to the evidence of their written assignments (about which more later) there is a kind of stock unwillingness in discussion to admit that there is a direct disagreement between two students. Ultimately, I suspect this rests on two bases: 1) fear of mistakes. (Mistakes are the sort of thing people can't afford to make. Being wrong is a loss of face. In spite of considerable effort, particularly in the unit on perception, I did not get very far in trying to persuade the students mistakes are beneficial, that most of our learning stems from a mistake which was properly seized on.) 2) lack of confidence in one's ability to deal with criticism so that one can a)defend one's position and b) improve it by taking account of the sound criticisms or achieve a more reasonable (as opposed to a merely different) position.

For another kind of example, let me refer the reader to Dr. Giannoni's description of the difficulties concerning the distributi of the cultural enrichment money for this year's trip to New Orleans (page 22 of his report) What was most disturbing to me was that the majority of the sophomores could not sit down in a cool-headed way and discuss the virtues of their different views, and that the fact that they stood to spend $5 more than the freshmen on the trip (though all of them received considerably more financial support than the freshmen) blotted all other factors out of significance. Even after the fact, only a few of my students could any grounds for criticism of their attitudes. Looking back on this affair, I feel that I should have done better about it, for I failed to confront the

students head on in the matter.

/A brief remark on grading follows at this point. It is to be found under another item, namely, ". . . doing an assigned homework exercise still often depends upon whether the student will be graded for it."/

Richard M. Burian
Philosophy
Florida A & M University

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The students as a whole in the Thirteen-College Curriculum Program have demonstrated an intese desire to learn. Never before have I been associated with so many students that were as serious about their work or as mature for their age as are our students. The importance of a college education as a means of climbing the socio-economic ladder (and mainly this reason) has constantly been drummed into their ears and at this point in their lives is deeply entrenched in their minds. When I discuss the value of an education with any of our students the answer is invariably, "to get a good paying job.... ..to get ahead in life." Perhaps this kind of motivation is typical, perhaps not. The point to be made here is that we are dealing largely with academically, unrefined products of our society with a strong motivation -- for whatever reasons -- to learn; and every effort must be made to redress the basic deficiencies -- in particular those associated with the communications skills -- these students suffer so that they can <u>successfully</u> and <u>confidently</u> compete in collegiate, academic programs, as well as in every other aspect of life.

Martin Carey
Biology
Clark College

I was forced to change my opinions /about students' not understanding satire/ when a student or two brought in samples of humor and satire that they had written without being asked.

The students did not like the Langston Hughes "Simple Series" nor did they like other Hughes. They were vehement in their condemnation of Hughes" "making fun" of black people. Nor did the Harry Golden material go any better. Students were not sure of their reasons for disliking Golden. At first I thought that they did not like him because they didn't understand the nature of humor and satire in spite of the fact that by the time that we reached Golden selections we had been involved in some spontaneous discussion of such topics as how humorists and satirists achieve their effect, what are their purposes, and tone in humor and satire. I was forced to change my opinions when a student or two brought in samples of humor and satire that they had written without being asked. Later, almost all students got into the act of writing their own and their peers generally liked what they heard. Later, analysis led me to the discovery that students are not generally interested in such subjects as segregation or even discrimination. They say that they are interested in literature by and about black people, but we do not know what their tastes in this area are. Their humorous and satiric productions were general interest pieces not really concerned with ethnic problems as a subject for discussion per se.

The experiences with /Siddhartha,/ Go Tell It On The Mountain and Manchild In The Promised Land lend support to the conclusion just stated. Our students found them of moderate interest but not exciting. They liked Siddhartha, but they found John /in Baldwin's novel/ unvelievable although both characters were involved in phases of the search for identity. It is a though the students are not convinced about the authenticity of John's dilemma. Blackness and the problems that blackness produce are real enough; however, the problems are beings without substance, shadows without form. Siddhartha on the other hand has problems with which my students could identify.

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The project has in general taught me to trust student abilities more than I had originally. I had taught Antigone several times before I began working in the program with the cumulative result that I had rarely been aware of any learning about the play beyond what we had come from my notes augmented by a few spontaneous observations which I felt were words of wisdom from the reputed "source of wisdom."

However, I was in for a rude shock when I taught Antigone a few weeks ago. It happened as an unplanned thing when one student could not put her hands on her copy of the play in time for class, borrowed another translation from a friend. As a student was reading a section from the Dudley Fitts and Robert Fitzgerald translation, the lady who had forgot her book noticed the difference in the translation and suggested that she would like to write a play based on a modern set of circumstances similar to those in Sophocles' play. The result was a beautiful three act play using a conscientious objector as the main character. The student play showed a remarkable understanding of the issues in the source and I might add, the student did a rather expert job of motivating the characters.

A number of interesting activities came from following the student's suggestion. Two students rewrote the famous choral ode, making man the greater force and read the written version to the accompaniment of music. Three students collaborated to write a version of the play which allowed only Creon to die and reached the conclusion that their version did violence to their notion of tragedy since it was their feeling that tragedy should evoke pity when the main character is defeated or dies violently. Although in the teacher's judgment some of the other activities were not qualitatively equal to the three activities mentioned, all showed more insight than a teacher making use of the lecture-discussion technique with himself as the center of focus could possibly have engendered.

Nathaniel Gaylord
Ideas and Their Expression
Bennett College

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There was one activity that I undertook during the latter part of the year that particularly impressed me because intitially it worked so poorly. I was aided immensely in increasing student comperhension by introducing some additional material suggested by one of my students.

During the latter part of the semester as we commenced activi-

ties on blood and its properties interest was high. I decided that it was an opportune time to discuss in detail a related research paper on the subject. Realizing that selection of a paper is very important, I decided to choose one as relevant as possible. Because my students and I are Negroes, I reasoned that the paper "Sickle Cell Anemia, a Molecular Disease" by Pauling and others would be most appropiate: this disease prevails for the most part in the Negro race and the paper contained significant information and data on hemoglobin. Interest continued at a high level the first day as we discussed its general introductory information. As we proceeded to discuss the more technical aspects of the paper pertaining to experimental methods and results, students were suddenly "turned off" and voiced several objections to the paper. These objections were as follows:

(a) the extremely quantitative nature of the results posed a real stumbling block to students who had had either no mathematics or a poor background in mathematics.

(b) the paper was too difficult to comprehend because of its specialized vocabulary.

In effort to combat the difficulties encountered, we began a thorough sentence by sentence analysis of the paper. It was evident that many students were not following through on assigned readings. One conscientious student, in an effort to better comprehend the paper, had searched through numerous books, periodicals and laboratory manuals for related information. She found an exercise in a laboratory manual that was extremely helpful to her in gaining a better understanding of Pauling's paper. She discussed it with me and suggested that I mimeograph copies of it and distribute them to the students. After examining the exercise, I readily agreed. The exercise contained a general introduction and numerous pertinent questions. Challenged by the questions and the easy to read style of the exercise, the students perused several listed bibliographies to find the answers, resulting in renewed interest. Utilizing pedigree charts and simple Mendelian genetics, most of the quantitative aspects of the paper were better understood.

The point to be emphasized is that many college courses could be more meaningful and successful if instructors would solicit and utilize constructive student suggestions in planning and teaching.

Perry Mack
Biology
Bennett College

Before I started working in this project, I lectured most of the time

The project has allowed me to teach fewer students that I could get to know as individuals as well as to know the individual academic problems that they may have. Students have less fear in smaller classes. Since the beginning of my teaching career, I have always attempted to have a classroom with a degree of freedom that students could feel. My reason for desiring freedom in the classrooms was in part due to the fact that I came through the regime of teacher domination. I vowed that if ever I became a teacher I would not make the classroom atmosphere as restrictive as mine has been. Since circumstances and fortune have combined to cause me to become a teacher and after having spent a year at a very liberal graduate school, where I saw how this particular freedom could be extended and perpetrated, I now have a fairly free classroom atmosphere.

In the project I have attempted to grant freedom and at the same time give the necessary control and direction needed in order to keep freedom from becoming chaos. The project has allowed me to use some techniques such as dramatization and chamber theater that would be frowned upon by some students and teachers in the regular program simply because these practices are generally not in use and because there is no precedent or prepration made to make the students receptive to the practices. I feel that the receptivity of project students lies in prior preparation and conditioning. Upward Bound students have certainly been very cooperative and have helped the general morale of the other students through the voluntary spirit of which they have been exemplars.

Iely Burkehead
Humanities
Jackson State College

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This project has had a great effect on me. Before I started working in this project, I lectured most of the time. I know my teaching was not as meaningful as I hope that it is now. I was more concerned about giving them a certain amount of information. After I attended the conference for this project, I became more concerned about the students' attitudes toward mathematics. I wanted them to become involved in the discussion and to figure out why things were done as they were. Since I have been working in this project my attitude has changed toward students, I understand

them much better.

Margaret Artis
Quantitative Thinking
North Carolina A & T
State University

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In all my years of teaching, I have not seen students devour reading materials so voraciously. The observation includes students in the course I taught in the regular program last year. No amount of cajoling has produced the volume of reading that I witnessed among students this year.

Nathaniel Gaylord
Ideas and Their Expression
Bennett College

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Since my participation in the Program represented my first teaching position, I cannot compare the impact of the project to the impact of any other experience. I can state, however, that the experience of working in curriculum development and being allowed almost complete freedom in designing and modifying the course which I have taught, has spoiled me terribly. I don't believe I shall ever again be content to participate in the same boring lecture-laboratory situation to which I was subjected in my own general biology training.

There are several other aspects of the Program, or rather of the students in the Program, which have given me new insights into the problems which we face. Many of these students have been told, implicitly or explicitly, that they are inferior. This has often come from their parents and teachers as well, of course, as from the society in general, and has imbued an "attitude of failure" into the students. One student is especially brought to mind. Inquisitive, industrious and exceptionally bright, he nevertheless rejected my suggestion of transferring to a school where he could find more academic challenge. He was afraid that he "just couldn't make it" at another institution. My telling him that I thought he could was, of course, flattering, but did nothing to change his basic negativism. The course, on the other hand, has. Because the students participate in the discussions and because the work is reasonably demanding, I feel that this student is developing the confidence he needs so desparately.

In addition to this being my first teaching experience, the Program offered my first opportunity to work within the Negro community. As a young, liberal, Caucasian girl, I approached the ISE project with a zeal peculiar to my breed. My first class found me quaking before a sea of black, brown, and tan faces trying desperately to establish a rapport. It would be difficult to describe the multitude of emotions which treated me like a tennis ball that first day. Fear, perhaps, overrode all. I was later to discover that during those first weeks of class, I was considered a despotic racist by my students! The lack of communication between my students and me during this time has since helped me to understand some of the race and generation-gap conflicts which exist all around. Each side sees the matter so clearly and so exclusively from his angle that it is incapable of meaningful dialogue.

Fortunately, this initial period passed. I have been assured that it is a stage which all new instructors undergo, whether black or white, biologist or philosopher. What followed with increased understanding of the students was a realistic effort to apply the principles of the Program to these students at this point in time. This is very important, and I sincerely hope that when the Program is written in publishable form, the flexibility which we have tried to develop will be maintained.

My role in the summer conferences has been a strange one. Outspoken by nature, it took me little time to establish myself as an authority on teaching, of course, never having taught! A year in the Program only served to render my forcefulness a little more realistic. In any event, being a member of a rather conservative group of biologists, most of whom were wonderfully tollerant of my exuberance, I feel I was able to do a little of the prodding toward innovation which has helped in developing the present curriculum.

This was my final year in the Program as I am returning to graduate school. Thanks to ISE, Berkeley is about to inherit a militant revisionist teaching assistant, just what it needs!

Ruth Chervin
Biology
Norfolk State College

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A student, in college pursues a particular field of study, usually due to a keen interest in that subject. In most cases, one has a particular aptitude for that subject. As a student in college, and in graduate school, I had a deep interest in Mathematics to the extent that I needed no motivation on the part of the

instructor. All of this was true because my career was to involve Mathematics. I did not take into consideration or even think about the student who is not mathematically inclined or the student who has no particular interest in Mathematics.

During the first years of my teaching career, I taught Mathematics to life situations until I attended the first summer conference at Pine Manor Junior College. I had the opportunity to re-evaluate both my teaching methods and the curriculum. I discovered that there are many concepts taught in "freshman Mathematics" that are irrelevant to the average college student in a general education program. Many concepts however, can be made more meaningful.

Reuben Drake
Quantitative Thinking
North Carolina A & T
State University

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I would like to particularly emphasize my conviction that teaching in this project has been for me the most academically liberating experience I have ever had. I particularly was grateful for the opportunity to experiment, and for not feeling "held in" by a syllabus. In the Humanities, I think the most important teaching practice that I utilized was that of letting a topic spin itself out for as long as seemed valuable for the students. There was no attempt to cover the field, so it didn't seem to make much difference how much time we spent on a particular subject or piece, the only consideration being the students: how interested were they in what we were doing and how much did I feel they were learning?

On the other hand, teachers in the regular program were rather tightly bound to a course syllabus, with the number of class periods per topic rather carefully spelled out. Having had experience in this type of course myself, I know that it is very frustrating, in that one never feels he is getting anywhere, and that one feels he is in a race to get to the end of the year and have covered each chapter of text, each historical period without panicing. I always felt as if I were doing a great injustice to the students, and I always felf that they didn't really care one iota about the course.

I am more than ever aware of the folly of going into a classroom with a preconceived notion of how things will work. I am no longer afraid to say, "I don't know" in answer to a student question. I am now safe in the conviction that a teacher, any teacher, is not expected to know everything, but at the same time I've learned to

add, "but I'll tell you where we can both find out!"

John L. Quinn
Humanities
North Carolina A & T
State University

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My second year in Thirteen-College Curriculum Program English has been very rewarding and challenging, even more so than my first year. My students seem more alert and eager to learn more scholastically able and intellectually curious, and more willing and inclined to experiment with different ways of articulating their ideas. I, myself, am more confident about the program and less assailed by the nagging doubts and apprehensions that I experienced last year. Although I followed essentially the same program as last year's with a few significant changes, I feel somehow that I have accomplished more "important things" with my students, that they and I both have given and received more, and that I have become increasingly aware of the many shortcomings of the traditional English program. Having taught in the regular program for six years, I was naturally a bit apprehensive, concerned and skeptical at first about the de-emphasis on the teaching of formal grammar, but after two years in the program I am convinced that memorizing grammar rules and doing exercises and drills do not necessarily make students proficient at writing.

Louise Stokes
Ideas and Their Expression
Norfolk State College

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This project has helped me to be a more relaxed teacher. I am more patient and understanding. The pupil-teacher relationship is closer. I have developed invaluable friendship. I can be tolerant enough to listen to the Beatles, Jimmy Hendrix, etc. I understand "hip" jargon enough to communicate during casual conversations with students. This I could not say a year ago; I see the importance of being flexible. I always ask for "gripes". When today's student has nothing to gripe about, I gripe (jokingly). One day a student seriously began explaining why he was not as vocal during class discussion as he had once been. He explained that football season was over and the campus life had grown dull. Questions were related to course activities, but other gripes were

about the need for a Spring break, etc. . . .

Any activity that involved much discussion by me always proved boring. As long as the students are actively engaged, no matter what the task, they are willing to work.

I am hoping that more attention will be given to various means of evaluating student progress at the end of the first year. I hope also that we can do more in a specific way to help students prepare for standardized tests.

Erma G. Dozier
Ideas and Their Expression
Tennessee A & I State
University

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This project has enhanced my interest in teaching. Since 1959, I have been attending NSF Summer Institutes in Botany and Biology, AIBS work shops and annual meetings, Botany and Biology pre and post Institute field trips, trying to keep up with the recent trends. But when I returned to school, our outlines did not reflect the changes in approaches and procedures.

When we met in Pine Manor to work out this program, it was like rubbing Alladin's Lamp. All of the experiences that I had wanted to place in my former classes were placed in this curriculum. There were so many that each teacher could choose the experiment that was most functional in his particular situation. Also the open-endedness left space for teacher and student creativeness or extended interest based on curiosity.

It is not easy to s[illegible] lecturing and conduct the course in this manner. The seminars at Tufts University gave me so much information that I needed, but mostly, it gave me direction and confidence in the new approach. The students together came up with answers which no one individual could give. They enjoyed meeting together to read and interpret scientific material.

The opportunity to meet with other biology teachers, to discuss the curriculum problems and to work through experiments together, particularly with the ISE personnel, was a great benefit to me. When I returned to the regular program, I shall suggest such teaching seminars in courses taught by several teachers. In this way new approaches and experiments could be evaluated, refined and introduced into a course keeping it abreast of recent trends.

Elizabeth Clark
Biology
North Carolina A & T
State University

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In two years the Program has succeeded in orienting me to a different style of teaching so much that I find myself unwilling to return to the lecture. It has come about that even when I am teaching a class outside of the program or am addressing any group which is not overly large, the most natural approach for me is to use some means or devices to permit my audience to become involved, to help them discover the point I wish to make. The discovery method has become part of my thinking process.

I have realized that it is feasible to personalize teaching practices and adapt to the needs of individual students; although this requires time and extra effort which are not available to most teachers.

The response of students, the level of interest and involvement they have exhibited exist in open contrast to the "silent" classes in the regular program and the courses which I taught before I entered the Thirteen College Program.

Teachers are often heard complaining about the apathy of student in class, the superficiality of their efforts and so on. I have been a little disappointed with the degree of interest in the program shown by other faculty on campus. Nevertheless, it has been possible to work closely and cooperate with some on an individual basis. This has been where I have emphasized my efforts.

There are still pressures exerted by administration and faculty to "traditionalize" the course in appearance if not in reality.

Roger C. Ingraham
Quantitative Thinking
Bennett College

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Except for being a teaching assistant and grader at the University of Wisconsin, my only teaching experienc has been my two years in this program. Therefore I really have nothing to compare it with with. All that I have learned as a teacher has been a result of this program. I would say that at the beginning I was mostly concerned about the subject matter to be taught. Gradually my interests

have shifted to the learning processes of the student. I have become less abstract and more concrete. I have developed my capacities as a classroom teacher rather than as a lecturer in a specialized area of study. I have developed my capacity as a discussion leader and organizer of projects.

I would say that this development has been the result of the nature of the program which emphasizes student-oriented approaches and the use of relevant materials. However, I must add that the program has not contributed as much to the development of new teaching styles as might have been possible. Rather, the emphasis of the summer planning conferences has been on curriculum development. We need to put in much more work on classroom techniques and teaching styles. Otherwise the teacher generally tends to teach the way he has been taught; and my education has not encountered my innovative approaches.

Edward F. Rice
Social Institutions
Bishop College

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The most valuable part of teaching in the program is that I was forced to think about every aspect of "the educational experience" -- which is hard to do when the main burden of a teaching assignment is to get across a specific curriculum.

Leslie Sanders
Philosophy
Southern University

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The greatest effect that the project has had on me as a teacher is that it has made me acutely aware of the importance of correlating subject-matter with the students' backgrounds. It is important and highly desirable to have a preconceived plan of action, but it is also necessary to be cognizant of the needs, interests and abilities of the students.

Initial plans for our enrichment program included ten seminars to be conducted by outstanding scientists involved in current research, but earlier seminars revealed that students' backgrounds had not been given ample consideration. After attending several seminars, students complained that the seminar lectures seldom allowed for student participation and were frequently highly technical to the point that they were rarely understood. They suggested

that the number of seminars be reduced and that they be given an opportunity to lead seminar discussions themselves through reading papers and giving oral reports. The alternative was considered and initiated with favorable results. Thus, the program encouraged me to be more flexible and to abandon pre-planned activities when an alternate course would be more beneficial.

Perry V. Mack
Biology
Dennett College

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Teaching in the project has been the most challenging experience of my short teaching career. Being a teacher in the project has made me much more cognizant of the whole area of curriculum reform. It has given me an opportunity to make some concrete contributions to the area of general education - an area which has been of much concern to me ever since I started teaching college freshman mathematics six years ago. I have gained new zest as I have gradually discovered new techniques and new ways of doing things. My interest in research has heightened as I direct more attention towards processes of teaching and learning that will promote creativity and critical thinking. As I seek new ways of making mathematics more interesting and challenging for my students opportunities are afforded for my own re-education of the role and purpose of the subject in the development of individuals.

Janie C. Jordan
Quantitative Thinking
Norfolk State College

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The TCCP philosophy is one which I have always used in my classes. I have always abhorred the symbolism of the desk, hence, I was not recruited for the project. I volunteered, and urged that we recruit teachers and begin the project at Tennessee A & I. Dr. Nebraska Mays, formerly of the Tennessee A & I faculty and administration will attest to this fact. Therefore, it is not a question whether the project has changed me. I enjoy the contact with students. I enjoy seeing them develop their abilities and potentialities, to see them change from shy, wondering, and puzzled persons into questioning, analytical, self-confident and determined young fledgling scholars. My greatest disappointments are that some never are able to understand their new freedom to becom independent and, hence, prefer authoritarianism, and some, because of financial

handicaps, or illness, or mishaps, have to leave the TCCP Program. For some of these reasons, we have lost some of our most promising students.

Alice Archer
Social Institutions
Tennessee State University

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There is no doubt that I am a better teacher now for having had this year's experience. I have learned more than I ever knew about the psychology of learning, and the subject has fascinated me for a long time. Both from classroom experience and seemingly constant outside contact and conferences, I've gained some real insights into the process by which lines of reasoning begin to make sense, then gathering momentum hook together like Lucretius' atoms and form a new body. I've alsp gained some very good friends. In a way, it has been one colossal sensitivity training course.

When I taught in the regular program at Bishop last year, I managed to reach some of the students and convert or train them to more effective and vital forms of thinking. Then, however, they tended to regard me either as a resident guru, which at my age is hardly appropiate, or as the Great White Standard, which is hardly seemly. On the whole, though, the classes were not demanding and with certain deviations, I perpetuated the tradition that trained me, which is not a bad tradition, but was less appropiate than one might hope.

The program classes are demanding, and the students inspired by the possibilities and the freedom, are almost exorbitantly so. If you are not teaching well, there is no way of blinking the ways they have of telling you so. Therefore, after a rocky couple of months first semester, I found my way through. Since one has to devote so terribly much of oneself in the teaching, a good or bad day in class spells the difference between dragging deptession and semi-mystical ecstasy. This in turn makes me commit myself heart and soul to the evolution of these young pepple who are also teaching me.

Anne Miller
Philosophy
Bishop College

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This project has made me write more. The idea of getting students involved and making students responsible for their learning is something I have been trying to do since I have been teaching. But to put this on paper was out of the question before I became a part of this project. I am not kicking it, I think this is good.

This project has give me self-confidence. Before becoming a part of the project, I often wondered how I rated with other teachers around the coubtry. Having been a part of the project for twp years, I have had the chance to plan with other teachers, teach these teachers, teach students with many teachers present, and most of all to learn from these teachers. I feel that this has made me a better teacher.

The project has made me realize that with all the effort I can ppssibly muster, I will still fail to help some students. Since being a part of the program I have had ample facilities and time to help students in any way. I am beginning to realize that there are some who do not desire my help, come hell or high water. I also feel that they have the right to fail.

Jimmie L. Cal
Biology
Alabama A & M College

I can say it in one sentence! As a high school teacher, I taught the full range of mathematics courses-- honors, regular, remedial, and I never could get any kind of enthusiasm up about getting into anything but the best classes. I don't mean that I resented the other classes; I just didn't enjoy teaching them. Well, guess what? I thoroughly enjoy every class period that I teach in this program, and I mean I enjoy it mathematically, as well as otherwise. (Pardon me-- it took three sentences.)

Johnsie Posey
Quantatative Thinking
Southern University

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The project has been beneficial to me in many ways. It has certainly widened my intellectual and educational horizons. I am more willing to accept various challenges by students and more enterprising in undertaking experiments which are not my particular specialty. For the first time in my teaching experience (and I am not a novice in the classroom) I have been free to experiment from a variety of materials in a manner that seems to bring the teacher, the students, and the world closer together.

Anne R. Phillips
Social Institutions
Alabama A&M College

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I feel very strongly that my teaching has improved during the course of the year. The students I have taught formerly have been from much better academic backgrounds, but I do not feel that I have become a competent teacher of students with poor academic background but that I, as teacher, have improved a great deal.

If one teaches students with poor academic backgrounds, there is no intellectual sophistication or "captive academic audience" quality to count on. You must directly appeal to their intellect and make what you are saying relevant and important. Philosophy can become very abstruse, but when one teaches such students it must be a vital and significant process. Of course, it always ought to be no matter what sort of students one is teaching. However, teaching students like the students at Bishop, it absolutely must be. Nothing else is possible.

When I first began teaching at Bishop, I was shocked by the students classroom behavior. They would stare out of the window for the whole class. They would shout out, "I didn't understand one

thing you said, Miss Satz". It was impossible under those sorts of circumstances to think you had been successful when you hadn't. My defense mechanisms are not capable of that much distortion. Conversely, their reactions in class when they were involved were excited and eager. I had to be a good teacher, otherwise I could not endure classes. So, daily I was forced to be a better teacher, to make every philosophical point, directly important and directly significant. Now I don't think I can ever let myself get away with less.

Martha Satz
Philosophy
Bishop College

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The effect that the project has had on me has been very gratifying. The wide range of materials and numerous techniques of teaching have strengthened my professional growth as well as made me a more profound instructor. The lack of restrictions has allowed for a freedom in the classroom which I never thought possible. The project permits a response on the part of the student which tends to show that education (learning) can be interesting. The informal atmosphere of the classroom has disposed of the idea that the teacher is always right and that her interpretation of a work is the only one; now with the exchange of ideas as opposed to a staunch lecture the student has much more of a voice in his learning process.

B. Dilla Buckner
Humanities
Jackson State College

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As a teacher in the program for the first year, I can say that this has been one of my best and most satisfying years. I have revelled at having the right equipment and materials to do a proper job of teaching. In teaching nine years at various Negro Institutions I have never had the kind of materials and the availability of materials which we presently enjoy in the Thirteen-College Program.

My elation with Thirteen-College biology, probably hinges most on the freedom with which we have to try innovative approaches to teaching.

Robert H. Cobbins
Biology
Southern University

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The program focuses on college teachers, many of whom, acquired knowledge and research skills but little or no teaching skills. Although I have completed several courses designed to enhance my teaching ability, most were teacher-centered; it was the teachers' responsibility to decide what should be taught, how, and for how long. Also, the use of the lecture was de-emphasized and the use of audio-visual materials strongly recommended. Because this program stresses student involvement and because students have raised questions about some of the time-honored teaching practices I have developed a more flexible teaching strategy and philosophy. The exchanges with other teachers in the program on both personal and professional, heated and friendly terms have broadened my knowledge of the social sciences.

Mary S. Brown
Social Institutions
Alabama A&M College

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The program authorized and enabled me to do what I have always cried to do, authorized or not. I was able to be myself and to be honest, because I did not have to protect the attitudes and feelings of other colleagues, nor to defend values and traditions to which I am not committed. Independence is indeed wonderful. As a result of my experience this year, I am refreshed and more enthusiastis about the possibilities of education and of this country. I think I have escaped from my brain-washed past and from my rut of easy answers.

Robert N. H. Andrews
Humanities
Lincoln University

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The project has given me a deeper respect for students' opinions and their common sense. As the class became more student-centered, I began to realize how many original and good ideas these young people have and how capable they are of developing and following through effectively constructive ideas to which they relate. The experience has added a new dimension to my teaching techniques and deepened the rapport between my students and me. It has also increased my knowledge in certain academic areas as I, in a request sometimes form students, have sought related ideas not included in the units that would stimulate them or clarify certain readings examined in class.

Francis Austin
Ideas and Their Expression
Southern University

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Having long been a proponent of the unstructured classroom, largely due to my own rather enjoyable experiences as a student, I find that I must now reverse stand. The unstructured classroom can work, either with very young and very bright students, or with students who have already been subjected to a high degree of academic discipline. Our students have not. It is a myth that our students have had rote work to any significant degree. Rather, they have simply been allowed to sit in classrooms for most of their academic lives, as long as they were quiet and orderly. If we are to make up what they have lost, it has to be done in a highly structured fashion. By failing to structure our program adequately, we have over-emphasized bringing the material to the level of the students and have under-emphasized bringing the students up to the level of the material.

Jean Klein
Philosophy
Norfolk State College

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The program itself is a drift. Most have lost interest in it. The Thirteen College Curriculum Program needs to address itself to the following questions.

1. How does the program relate to the student movement throughout the country?
2. What is the role of students in planning the curriculum?
3. Is the program becoming a mere substitute for the regular curriculum?
4. What voice do teachers really have in the policies of the program?
5. Is the program too rigid for real creativity?
6. Can the program really have a testing policy?

John Ernst
Quantatative Thinking
Mary Holmes Junior College

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I would simply suggest that ISE/ CRG/ I3 College, critically analyze itself in terms of demands being issued by students across the nation, especially with respect to curriculum planning and operation, and the like. We might find that we aren't nearly as innovative as portrayed to be.

Stephen Cawood
Social Institutions
Mary Holmes Junior College

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When it comes to teaching technique, I am a traditionalist. Most of my students need work on the basic skills of writing and analysis, and if I concentrated on anything else at the college level, I would do them a disservice-- this is, after all, their last opportunity to learn these skills. I tried to make this process as palatable as possible-- for instance, by setting up adversary proceeding to highlight conflicts of interpretation, political program, or social philosophy.

This year was my first try at teaching and it's hard as hell. As for the program, I think it does have certain virtues-- the materials are more contemporary and black-oriented than those in the regular curriculum, and the field trips and films liven things up a bit. Essentially, however, this is a cooperative program, tailored for conservative faculty and schools, which constantly endeavors to obscure this fact and to confuse its new faculty, outside observers, and funding sources by making liberal noises about "innovation," "experimentation," and the "inductive approach" which are entirely empty of content.

I am not of the opinion that the fundamental educational questions in the social sciences at black schools have to do with teaching method. The issues are matters of course content-- how much black studies? How much study of militant and radical points of view which break the bonds of American consensus politics? These issues deserve academic treatment because they now have real influence in America, especially black America. Both can be treated in an academically sound way, which is analytical, critical, comparative, and not exclusive of other points of view. But in any form, they are repulsive to the faculties of Negro colleges and potentially dangerous to status quo arrangements. The TCCP finds it expedient to avoid them, for the non-controversial and usually trivial questions of techniques. However, a program oriented to the actual concerns of students would do more to interest them in learning than two years of "role playing" or the superficial diversions of educational technologies. Teaching methods, moreover, are not only fatuous but harmful if they deflect teachers from the major educational task-- work on the basic skills of writing, expression, and analysis which these students have failed to master as a result of impoverished, discriminatory educational systems.

During the Winter Quarter, I introduced the unit on black history with a fictional account of a slave rebellion-- William Styron's Confessions of Nat Turner. One reason for this beginning was to emphasize that black people have been historical actors and not only historical victims. After finishing Styron, we read the criticisms of Styron in Ten Black Writers Respond, which raised a second fundamental issue-- the fate of black history in a white society, the conflict of black and white interpretations of the historical past. In the course of this evaluation, we encountered a third question concerning

the nature of history itself-- the relation of the historical conciousness to the past event, the effect of present purposes perception of past social reality. To resolve these questions, I asked students to seek out primary sources on the Nat Turner slave rebellion (such as the Confessions as told to Thomas Gray in 1831) and to write a paper on the subject of "Styron's Nat Turner and the Historical Turner." Students seemed highly interested in this project and learned a great deal, I think about the nature of history as a problematical and creative enterprise, about distortions arising from a writer's racial and political perspective and, not least, about Nat Turner.

Michael W. Miles
Social Institutions
Tennessee State University

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In the beginning, at Pine Manor, I honestly thought of the project as an opportunity to be "in" on an educational revolution that would grow from thirteen colleges into the American higher Education in general. It could have been so except for the fact that there are counter-revolutionaries who don't even know they are! As a Ph.D. candidate in an experimental, interdisciplinary Social Science degree program, I felt particularly qualified for the Curriculum Developement Program inasmuch as I had gone through the battles between the psychologists, the sociologists, the economist, etc. Only was I to meet again the same old questions and the tired old answers. However, I sustained a deep belief that we could "pull it off" all the way through the first semester. The students were "with us" and we all tried hard. It was becoming increasingly obvious that we were missing something, a theme to tie together the units.

Indeed, the units themselves were chosen arbitrarily and it showed. By second semester of the second year, it was clear that something drastic was needed, either turn the social sciences into Black Studies or start all over again.

The effect on me as a teacher has been one of total dissillument. There must be changes made in the CRG in Social Sciences. Let them write a unit and give it to us as an example of what they want. So far all we really have are "topics" and no "mechanics". I do not mean for them to teach us how to teach, but rather, to show us how "different" is different!

Carolyn Cline
Social Institutions
North Carolina A & T State University

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While I have enjoyed the "interesting" frills of mathematics using the various techniques and methods I have employed, I get a feeling, that the students have enjoyed these "interesting" frills of mathematics, but feel a tremendous loss when they are required to have knowledge of the basic skills for applications to other courses and situations and to objective tests.

Culturally and economically deprived students have a different value system than those from a middle-class economic group. These students are in college searching for a means to step out of poverty -- to gain security. They must see mathematics in relation to their majors-- majors that will provide them with the appropiate training and skills needed to obtain a good job.

Joseph W. Colen
Quantitative Thinking
Jackson State Mississippi

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It is perhaps difficult for a middle-aged, middle-class white man to see anything in the past year as being more important than the experience of working with black students. I don't think that anything in the material or the methods was more important than that. As I remarked at earlier points in this report, I am not sure that all or even most of our experiment are successful, either in methods or materials.

But for me the past year has been a revelation--not without frustrations or heartaches-- it is a bit hard (but salutary, all the same) to realize that you are hated for the color of your skin-- and I would not have changed any of it. I shall be back next year.

Vincent C. De Baun
Humanities
Talledega College

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